

THE ORNITHOLOGY OF TRAVANCORE AND COCHIN.

BY

SĀLIM ALI.

With Notes by HUGH WHISTLER.

PART IV.

(Continued from page 320 of this volume).

FAMILY: SYLVIIDÆ.

Acrocephalus stentorius brunnescens (Jerdon). The Indian Great Reed-Warbler.

Specimens collected: 286 ♀, 287 ♂ 15-2-33 Kottāyam S.L.; 422 ♂ 7-3-33 Kūmili 3,000 ft.; 1041 ♂, 1042 ♀ 30-12-33, 1052 ♂ 31-12-33 Karūpadanna ca. S.L.

Elsewhere noted at: Vembanād Lake (Trivandrum Environs).

Colours of bare parts: Iris hazel to olive-brown; bill, upper mandible excluding commissure horny-brown, commissure and lower mandible pale flesh colour, horny at tip; mouth bright orange-brick colour; legs and feet horny-grey or pale plumbeous; claws dusker.

[The Survey specimens measure:

	Bill.	Wing.	Tail.	Tarsus.
4 ♂ ♂	24.5-26.5	87-94	76-84.5	27.5-29.5 mm.
2 ♀ ♀	25.5-26	85-90	76-79	28 mm.

Additional specimen from Travancore examined:

Brit. Mus. Coll.: ♀ 26-4-1910 Thodupuzha (Nair).

In *J.B.N.H.S.*, vol. xxxv, p. 450, I threw doubt on the validity of the resident breeding race in Ceylon *A. s. meridionalis* (Legge), as the two specimens in the British Museum did not appear to me to be separable. Owing to the courtesy of the Director of the Colombo Museum I have examined four more specimens from Ceylon. Two of them are undated and one unsexed, whilst one of the others is very worn, but the series, so far as it goes, makes me more prone to accept the probability of a small and very dark Cinghalese race. Further material is required to settle the point, as although Mr. Stuart Baker (*Nidification*, ii, 356) accepts it, he considers it intermediate in character between *brunnescens* and his race *amyae*. The probability that true *brunnescens* reaches Ceylon as a winter visitor, living then alongside a resident separable race, must also be borne in mind.

In the *New Fauna*, ii, p. 388, the genus *Acrocephalus* is said to undergo a complete moult both in autumn and spring; and it appears to be certainly correct that there are complete moults in spring and autumn in the closely allied *Acrocephalus arundinaceus* (vide *Practical Handbook of British Birds*, i, 335). After examining a very large number of *A. s. brunnescens* I can however only come to the conclusion that there is no spring moult. The complete post-nuptial moult takes place from September to November. So far as I can ascertain the post-juvenile moult is complete.

In fresh autumn plumage this form is distinctly washed with grey on the upper parts, more particularly on the crown and hindneck. With wear in summer the colour becomes much duller and browner.—H. W.]

There is nothing on record to show the status of the Indian Great Reed-Warbler in Travancore and Cochin. The latest date on which the Travancore Survey came across it was 7 March among scrub and bushes on a seepage marsh by the margin of Periyār Lake. The birds were common there at that

time, but whether it is a resident species or not is doubtful. They were also abundant amongst the densely shrubbed bunds or dykes in the backwaters (consisting of *Pandanus* and clumps of tall coarse grass) where the birds hopped about in the undergrowth, occasionally clambering up into the overhanging fronds of cocoanut palms. It frequented similar environment at Karūpadanna and about the Vembanād Lake. Specimen No. 1052 was a solitary bird obtained among bushes growing on a spit of dry sand on the sea-shore.

Besides the loud, harsh and often ventriloquistic song of the male which is uttered from exposed perches on bushes and the like, it has a harsh, single 'Ke' like *Turdoides*, uttered every few seconds and also a 'chr-r, chr-r', etc. similar to but much louder than that of the more familiar Blyth's Reed-Warbler.

Breeding: The gonads of the specimens were in an undeveloped condition. No. 1042 (30 December) was immature with two imperfectly ossified patches on the anterior part of the skull. No record of its breeding in this area exists, though it is not inconceivable that it may do so about the backwaters.

Acrocephalus dumetorum Blyth's Reed Warbler.

Specimens collected: 69 ♀ 12-1-33, 96 ♀ 14-1-33 Marāiyūr 3,500 ft.; 113 o? 19-1-33 Münnār 5,000 ft.; 148 ♀, 149 ♀ 25-1-33 Sānthanpāra 3,500 ft.; 210 ♂ 4-2-33 Thattākād 200 ft.; 324 ♀ 21-2-33, 342 ♀, 343 o? 23-2-33, 360 ♂ 25-2-33 Peermade 3,200 ft.; 396 ♀ 3-3-33 Kūmili 3,000 ft.; 554 o? 10-4-33, 562 o? 11-4-33 Cape Comorin ca. S.L.; 960 o? Nemmāra 300 ft.

Elsewhere noted at: Kottāyam (ca. S.L.); Wūndamet; Rājampāra (1,350 ft.); Tenmalāi (500 ft.); Kūriārkūtti (1,600 ft.); Wadakkāncheri (400 ft.); Pādagiri (3,000 ft.—Nelliampathy Hills).

Colours of bare parts: Iris hazel-brown (dark straw colour in one); bill, upper mandible horny-brown; lower mandible pale flesh colour; mouth orange-yellow or pale pinkish-yellow; legs, feet and claws greyish flesh colour; soles pale yellow. In the albino (No. 210): Iris olive-brown; bill pinkish flesh colour slightly brown on upper mandible; mouth orange-yellow; legs, feet and claws yellowish flesh colour.

[Additional specimens examined:

B. M. Coll.: ♀ 7-4-07 Manthukuly [Mūthūkūzhi ?], Travancore (Nair); ♂ 6-2-80 Mynall (Bourdillon); o? 7-3-77 Mynall (Hume Coll.).

Measurements:

	Bill.	Wing.	Tail.
1 ♂	17	63.5	53 mm.
6 ♀ ♀	16-18	60-62.5	51.5-54.5 mm.

This common migrant arrives in India in worn breeding dress and the complete moult takes place from August to November, mostly in September and October. The spring moult, which I think is confined to the chin, throat and breast, is late, taking place about April and May. The upper plumage becomes much duller and browner by wear.

Some juveniles arrive in India before the post-juvinal moult. They may be distinguished, in addition to the softer character of the plumage, by being a more rusty-brown above, especially on the rump and upper tail coverts (thereby recalling *Acrocephalus scirpaceus*) and on the edgings of the wings and tail, the quill feathers being altogether duller and washed with this colour; the underparts are slightly paler.

I suggest that the post-juvinal moult is usually complete, but that some individuals do not moult the primaries, primary coverts, secondaries and greater coverts or the tail.—H. W.]

Blyth's Reed-Warbler is a common winter visitor to Travancore and Cochin. A marked decrease in its numbers was observed by the beginning of April. The last date on which the Survey came across it and obtained a specimen was 11 April, by which time most birds had departed. This specimen was very fat also, suggesting that it was ready to emigrate.

In the cold weather it is a common species in hills and plains alike, frequenting scrub country, hedges and brushwood. At Pādagiri (3,000 ft.) in the Nelliampathies it was particularly abundant in the dense bracken thickets on

water-logged patches along the hillstreams, commonly in association with *Phragmaticola aëdon*. It hops about the undergrowth singly, incessantly uttering its single harsh note 'Tschuk' at intervals of a few seconds, varied occasionally by 'chur-r-r' or 'chr-chr'. It is a great skulker and seldom shows itself.

It is also a winter visitor to Ceylon.

The gonads of all the specimens were in a quiescent state.

Acrocephalus agricola Jerdon. The Paddy-field Warbler.

Specimens not procured.

A single example was flushed in a field of standing paddy in a forest clearing at Thattākād (200 ft.), but its identity remains unconfirmed. It has not been obtained in Travancore or Cochin before, the nearest records being from the Wynaad (Hume, *S.F.*, x, 390) and the pair collected by William Davison in the Brahmagiri Hills, Coorg, in February 1883 now in the British Museum.

Locustella naevia straminea Seeböhm. The Eastern Grasshopper Warbler.

Specimens not procured.

Noted at Marāiyūr (Annemalāi Hills) and Pādāgiri (Nelliampathies). Ferguson (*J.B.N.H.S.*, xv, 456) records a specimen obtained in a swamp in Travancore at 4,000 ft. elevation during April 1901. I procured one in the Biligirirangan Hills (4,500 ft.—Coimbatore District) on 29-12-32.

This species, apparently a winter visitor, was not uncommon on hillsides covered with tall grass (*Andropogon* sp.) interspersed with dwarf date palms above Kodekkādū (near Marāiyūr) at between 5 and 6 thousand feet elevation, especially on the edge of sholas. It was also present in similar facies around Pādāgiri.

The bird was invariably met with singly, uttering 'chek-chek' or 'chur-r, chur-r' from its concealment, something like the notes of Blyth's Reed-Warbler. It is a great skulker and flushed only with difficulty when almost trod upon. After flying a few yards it dives headlong into the grass stems and is well-nigh impossible to flush a second time. So swiftly does it thread its way through the stalks low down near the ground that by the time one reaches the spot where it dived it has vanished mysteriously, and no amount of trampling around will avail!

Orthotomus sutorius sutorius (Pennant). The Tailor Bird.

Specimens collected: 245 [♂] 8-2-33 Thattākād 200 ft.; 616 ♀ juv., 617 ♀ 18-4-33, 634 ♂ 21-4-33 Aramboli 250 ft.; 722 ♀ (imm.) 25-7-33 (Thirūmalāi 100 ft.); 757 ♂ 31-7-33 (Akkūlam 150 ft.); 896 ♂ (imm.) 13-8-33 (Nettāyām 200 ft.) Trivandrum Talūk; 948 ♀ 6-12-33 Nemmāra 300 ft.

Elsewhere noted at: Marāiyūr (3,500 ft.); Kottāyām (ca. S.L.); Peermade (3,200 ft.); Kūmili (3,000 ft.); Rājampāra (1,350 ft.); Trivandrum Town (ca. S.L.); Cape Comorin (ca. S.L.); Chālakūdi; Wadakkācheri (400 ft.); Trichūr; Ernakūlam (ca. S.L.).

Colours of bare parts: *Adult*: Iris and eyelids orange-brown to orange-red; bill, upper mandible excepting commissure horny-brown, commissure and lower mandible pinkish flesh colour; mouth pale flesh colour; legs and feet brownish flesh colour; claws dusky. *Juvenile* (No. 616): Iris pale olive-brown; upper mandible horny-brown, lower mandible pale flesh; gape yellow; mouth pinkish-yellow; legs, feet and claws pale pinkish-flesh.

[Measurements:

	Bill.	Wing.	Tail.	Tarsus.
4 ♂ ♂	15-16	48-51	37.5-55	19-19.5 mm.
2 ♀ ♀	15-16	43-46.5	34.5-36.5	19 mm.

It is with considerable hesitation that I attribute this series to the typical race for it is in truth intermediate. In colour the specimens agree with the Indian form *O. s. guzerata* but they are rather small and in that particular agree with the Ceylon bird. Also No. 757 ♂ dated 31 July has the tail in moult and the new feathers appear to be of the long summer type, which suggests that in Travancore as in the typical race of Ceylon the long pointed feathers may be found throughout the year.—H. W.]

The Tailor Bird is a common resident species in Travancore and Cochin, throughout the low country and up to at least 3,500 ft.—probably higher—in the hills. I do not seem to have come across it in the Nelliampathies, but Kinloch (*J.B.N.H.S.*, xxvii, 943) records it as common in those hills.

It frequents scrub and secondary jungle as well as hedges and shrubbery about cultivation and human habitations, being especially fond of the mango and jack-fruit gardens about homesteads along the backwaters.

In the Pālñi Hills, Fairbank (*S.F.*, v, 406) records it from Shembaganur 5,500 ft. The typical race, *O. s. sutorius*, is also resident and common in Ceylon.

Breeding: On 15 April (Aramboli) a half-built nest was discovered in a small bush at 18 inches from the ground in fairly open scrub under a Babool grove. Several of the Jamūn-like leaves had been sewn together into a sort of funnel and one of the owners was observed lining it with vegetable down. Specimen No. 616 (18 April) was in juvenile plumage. No. 617 (same date) had enlarged ovarian follicles ca. 4 mm. in diameter and a prominent incubation patch, and was obviously breeding. No. 722 (25 July) had a soft skull and was undergoing post-juvénal moult, while 896 (13 August) also had an imperfectly ossified skull, but had already completed moult into fresh adult plumage.

The evidence shows that the breeding season in Travancore commences in April and probably lasts till the end of May or the middle of June. Ferguson (*J.B.N.H.S.*, xv, 456) says that it breeds in May.

***Cisticola exilis erythrocephala* Blyth.** The Red-headed Fantail-Warbler.

Specimens not procured by the Surveys.

According to Ferguson (*J.B.N.H.S.*, xv, 456) this species is fairly common and resident on grasslands on the High Range in Travancore. Mr. Whistler has examined the following two specimens in the Trivandrum Museum collection: ♂ juv. 25-1-07, ♂ juv. 26-1-07 Devicolam. He measures them as follows:

	Bill.	Wing.	Tail.	Tarsus.
2 juv. ♂♂	12.5	45.5-48	51-53	18.5-19 mm.

In the Pālñi Hills, Terry (*S.F.*, x, 476) found this warbler very common at Kukal and Kodaikanal. Fairbank (*S.F.*, v, 406) shot a ♂ on Mount Nebou (6,000 ft.) on 12 June and saw two others, while Mr. Howard Campbell also found it common in small colonies in those hills (*Fauna*, ii, 420).

No records of its breeding in Travancore or Cochin apparently exist.

***Cisticola juncidis sálmalii* subsp. nov.** The Travancore Streaked Fantail-Warbler.

Specimens collected: 79 ♀, 80 ♀ (imm.), 81 ♀ (imm.), 82 ♂ 13-1-33 Marāiyūr 3,500 ft.; 357 ♂ 358 ♂ 25-2-33 Peermade 3,200 ft.; 382 ♀, 383 ♂ 384 ♀ 1-3-33 Kūmili 3,000 ft.; 508 ♂, 509 ♀, 510 ♂, 511 ♂ 5-4-33 (Velayāni Lake) Trivandrum Environs; 570 ♂, 571 ♂, 572 ♀ 12-4-33 Cape Comorin ca. S.L.; 623 ♂ 19-4-33 Arāmboli 250 ft.

Elsewhere noted at: Sānthanpāra (3,500 ft.); Kottāyam (ca. S.L.).

Colours of bare parts: Iris pale hazel-brown or pale olive-brown; bill, upper mandible and tip of lower pale horny-brown, commissure and rest of lower mandible pinkish flesh colour; mouth pink, brownish-pink or pale yellowish flesh-colour, in some individuals streaked or blotched with brown; legs and feet pale brownish flesh-colour; claws dusker.

[Additional specimens examined:

Trivandrum Mus. Coll.: ♂ ♀ 9-3-02 Trivandrum; ♂ 10-8-01, ♀ 8-8-01 Cape Comorin.

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
5 ♂♂ (summer)	10.5-11	51-55.5	33-34	19 mm.
6 ♂♂ (winter)	10.5-11	47-52.5	37-40	18.5-19 mm.
3 ♀♀ (summer)	11-11.5	45.5-48.5	33-36.5	18-19 mm.
4 ♀♀ (winter)	11-11.5	46.5-48.5	35.5-40	17-18 mm.

At the time when I was writing the account of this species in the Eastern Ghats Survey (*J.B.N.H.S.*, xxxvi, 564) no specimens of the Streaked Fantail Warbler were available from Travancore for examination. Mr. Sálím Ali's fine series has now revealed the interesting point that this species has developed one of the peculiar dark Travancore races which we have found in so many other species. Compared with birds from North India, the Travancore series appears very 'saturated' and richly coloured, both on the upper surface and below. The rumps are bright reddish-brown and the flanks are washed with bright rufous. The small beak immediately separates the Travancore birds from the Ceylon race. I have submitted our birds to Rear-Admiral Hubert Lynes, the well-known monographer of this genus, and he agrees with the recognition of this well-marked race from the rain area. I have accordingly much pleasure in naming it after Mr. Sálím Ali in recognition of his valuable work in carrying out the Travancore Survey. The type No. 358, ♂ adult in winter plumage, 25 February 1933, Peermade 3,200 ft., has been deposited in the British Museum.—H. W.]

The Streaked Fantail Warbler is a common resident species in Travancore and found in suitable localities throughout the low country as well as up to at least 5,000 ft. in the hills. Standing paddy fields and areas under tall grass, especially on water-logged ground as on the margins of Periyár Lake and in the swampy depressions or 'valleys' among the hilltops at Wúndamet, seldom fail to attract it whilst it also frequents the grass-covered hillsides everywhere. Curiously enough I seem to have missed recording it in Cochin though there is no reason to doubt its occurrence there.

Though usually met with singly and never in flocks, it was not uncommon to find 10 or 15 birds gregariously in the same patch of grassland. They were also observed at times to alight on the ground, on bunds, etc. and hop about like Munias, presumably after insects. What were evidently courtship displays were in progress between January and March. A bird (♂?) launches from its perch near the tip of an upstanding grass-blade or reed, rises in the air for about 50 or 60 ft. in irregular wavering zigzags, and flies about in the same irregular undulations and wave crests in no particular direction. It closes its wings on each descending curve and flaps rapidly a few times on the upward curve. The actions are reminiscent of a Black-bellied Finch Lark. Just at the bottom, before commencing the upward curve, it utters a single 'chip' like the snip of a barber's scissors heard in the distance. This is repeated about once every second and is also uttered from a perch at the same intervals. After flying about aimlessly in this manner for two or three minutes, the bird descends to a perch some distance away or in the same neighbourhood.

It has not been recorded from the Pálñi Hills, but it is likely that some at least of Terry's notes thence (*S.F.*, x, 476) on *Cisticola c. erythrocephala* refer to this species.

In Ceylon it is represented by the race *C. j. omalura*.

Breeding: Apparently nothing is on record as regards the breeding season in this area. Of the specimens obtained by the Survey, Nos. 80 and 81 (13 January) were immature with imperfectly ossified skulls. No. 82 (same date and in the same paddy-field) had testes enlarged to 4×3 mm. and it was in worn breeding plumage. None of the others showed any gonadal development.

From his examination of the specimens, Admiral Lynes concludes that the breeding season in Travancore is probably from August until March.

Franklinia gracilis albogularis (Walden) ? The Coorg Wren-Warbler.

Specimens collected: 195 ♂ (imm.) 30-1-23 Sānthānpāra 3,500 ft.; 241 ♂? 8-2-33 Thattākād 200 ft.; 367 ♂, 368 ♂ 27-2-33, 389 ♀ 3-3-33 Kūmili 3,000 ft.; 466 ♂ 18-3-33 Rājāmpāra 1,350 ft.; 649 ♂ 23-4-33, 655 ♀ 25-4-33 Balamore Estate 2,000 ft.

Elsewhere noted at: Ūrūmbikera Reserve Forest (near Mūndakāyam); Wadakkāncheri (400 ft.); Pādāgiri (3,000 ft.—Nelliampathies).

Colours of bare parts: **Adult:** Iris straw colour; bill black, horny at chin; mouth slaty-brown and pink or pinkish-brown; legs and feet brownish flesh colour; claws horny-brown. **Immature** (No. 195): Iris orange straw;

bill dark horny-brown, paler at commissure and gape. Mouth pale yellowish cream colour with slaty blotches; legs and feet yellowish flesh colour; claws horny-brown.

[Additional specimens examined:

Triandrum Museum: ♂ 30-8-03, ♀ 3-8-08 Konni; o? 2-8-00, oo juvs. 27-7-00 Ponnudi.

Brit. Mus.: o? 15-3-75 Elgugand (Bourdillon).

Measurements:

	Bill.	Wing.	Summer tail.	Winter tail.
4 ♂♂	12-13	46-46.5	45-47	46 mm.
1 ♀	13	44	39	— mm.

N.B.—Nos. 195 and 367 both appear to me to be in moult from juvenile to first winter plumage so they are omitted from the measurements.

In the Eastern Ghats Report (*J.B.N.H.S.*, xxxvi, 564) I suggested that this species would probably prove to have races when better material was available. This has been confirmed though my additional material is not quite sufficient yet to allow me to work out the question fully for the whole of the range.

First of all I am definitely of the opinion that the Ceylon bird requires separation on the grounds that the summer and winter plumage are alike, both being of the type which in continental India is the breeding plumage, i.e. dark above with a grey pectoral band. The tail is the same length in both seasons and the juvenile plumage resembles that of the adults in the possession of the pectoral band. This similarity between summer and winter plumage in Ceylon is an interesting parallel with the cases of *Prinia sylvatica valida* and *P. inornata insularis* in Ceylon, already described in the Eastern Ghats Survey. The name for this race is evidently *Prinia pectoralis* Legge, *Ceylon Blue Book*, 1874, p. 9—Hambantota District, Ceylon.

The Travancore bird also requires separation. It has a definite summer and winter plumage, and the particular interest of this form lies in the fact that the pectoral band, distinct as in other continental forms in summer plumage, is also adumbrated in the winter plumage, thereby connecting the extreme difference of the continental Indian and insular Ceylon forms. The upper parts and wings are considerably darker and more saturated in winter plumage than in the winter plumage of the typical form. The upper parts may also be darker in summer plumage, but summer plumage wears and bleaches so rapidly in this species that I cannot speak positively on the point without a larger series. There is no existing name available for the Travancore race but it is possible that Coorg birds are sufficiently close to it to allow the name *Prinia albogularis* Walden, *Ann. Mag. N.H.*, 1870, vol. v. p. 219—Coorg to apply to both. The only two specimens in existence from Coorg however are two summer birds and these do not allow the point to be settled.—H. W.]

Franklin's Wren-Warbler is a common resident species in the Travancore-Cochin area, being met with by the Surveys both in the low country and in the hills up to about 5,000 ft. Ferguson (*J.B.N.H.S.*, xv, 457) states that it occurs at all elevations. It does not enter evergreen sholas but frequents the patches of tall grass, scrub and deciduous jungle on the hillsides which often alternate with them, and also similar facies in the low country. It usually keeps in small parties of 3 to 5 birds, but flocks of 10 or 12 may sometimes be seen. They are active, restless little birds for ever on the move, and in tall grass country their presence is usually proclaimed by their tinkling calls as they hop about among the stems. One seldom gets a glimpse of them unless an individual momentarily clambers up to the top or as they fly from one thicket to another. They were much more in evidence with the approach of the breeding season when males constantly clambered up on to exposed perches on bush-tops or grass and uttered their 'chipping' song.

The birds were observed feeding regularly on nectar from the blossoms of *Erythrina lithosperma* shade trees in abandoned tea clearings overgrown with tall grass and bushes.

This Wren-Warbler does not appear to have been recorded in the Pālmi Hills. In Ceylon it is represented by another race, *F. g. pectoralis*, with a local distribution.

Breeding: The Surveys found that at the end of April (Ashāmbū Hills 2,000 ft.), the birds were either breeding or ready to do so. In No. 649 (23 April—fresh summer plumage) the testes had enlarged to 4×3 mm., while No. 655 (25 April also in fresh summer plumage) had a soft ovarian egg.

According to T. F. Bourdillon (*J.B.N.H.S.*, xv, 457) the breeding season in Travancore is May, June and July, the birds preferring elevations between 300 and 1,000 ft. above sea level for the purpose.

Schoenicola platyura (Jerdon). The Broad-tailed Grass-Warbler.

Specimens collected: 334 [♂] 22-2-33, 355 ♂, 356 o? 25-2-33 Peermade 3,200 ft.; 299 [♀] 5-3-33, 413 ♀ 7-3-33 Kūmili 3,000 ft.; 438 ♂, 439 ♀ 11-3-33 Camp Derāmālāi 4,000 ft.; 660 ♀, 661 ♂, 662 ♂ 25-4-33 Mūthūkūzhi, Ashāmbū Hills—3,500 ft.; 1053 ♂, 1054 ♂, 1055 ♂ 23-10-33 Peermade 3,200 ft.

Elsewhere noted at: Sānthanpāra (3,500 ft.—Cardamom Hills).

Absent on *Andropogon* grass-covered hillsides between 3,000 and 4,500 ft. on the Nelliampathy Hills (16-20 December 1933) although facies apparently suitable!

Colours of bare parts: Iris brownish-grey, greyish-olive or olive brown; bill, upper mandible horny-brown, lower horny-grey or flesh colour; mouth yellowish-pink, paler in some individuals and stippled with brown in others; gape yellowish cream colour or yellow; legs, feet and claws greyish-brown.

[Additional specimens examined:

B.N.H.S. Coll.: ♂ 30-5-96 Kodaikanal (Cook).

Brit. Mus. Coll.: ♂ ♀ 6-4-01, ♂ 5-4-01 Muthukaly [Mūthūkūzhi ?] (Ferguson); ♂ ♂ ♀ 17-4-80 Colathoorpolay [Kulattūpūzha] Patnas 4,000 ft. (Bourdillon—Hume Coll.); ♀ 18-4-77 same locality 3,800 ft. (Bourdillon); ♂ 25-6-81 Pālmi 5,000 ft. (Fairbank); ♂ 26-4-83 Pittur, Pālmi (Terry).

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
8 ♂ ♂	13.5-16	64.5-69	71-73	21-23 mm.
4 ♀ ♀	13-14	63-64.5	63-66	21-21.5 mm.

In the *New Fauna*, ii, p. 436, Mr. Stuart Baker has given a note on the possibility of there being two races of this bird in its limited distribution on the Western Ghats from South Travancore to Belgaum. He bases the possibility on the two items of size and colour. With regard to size, he states that birds from Travancore and Ceylon measure 63 to 67 in length of wing and birds from Belgaum 66 to 71 mm. I measure the Belgaum series as follows:

	Bill.	Wing.	Tail.
5 ♂ ♂	14-15	70-72	65.5-72.5 mm.
2 ♀ ♀	14-14.5	66.5-67	61.5-64.5 mm.

Compared with our Travancore series there is evidently no ground for separating birds from the two areas on size.

As regards colour, this point could not be settled on the British Museum series even when augmented by Mr. Sālim Ali's fine collection. The Belgaum birds were all collected in September and they are in very worn and faded dress, whereas all the Travancore birds were collected from February to April and are evidently in much fresher plumage after the complete moult which must take place in the winter. Mr. Pillai, however, very kindly made a special point of collecting three males for us in October on Peermade, so that they should be in a state of plumage comparable with the Belgaum series. These prove to be dull and faded before the approaching moult and cannot be separated from the Belgaum birds. The possibility of two races has therefore been thoroughly disposed of.—H. W.]

The Broad-tailed Grass-Warbler is common in the Travancore Hills between about 3 and 4,000 ft. Ferguson (*J.B.N.H.S.*, xv, 457) did not meet with

it at Peermade or on the High Range, though the Survey found it not uncommon in the former locality. It frequents tall grass-covered hillsides, often steep and precipitous, and is particularly fond of the marshy or moist flat depressions among the hilltops overgrown with thin matted grass or reeds as about Wündämet in the Cardamom Hills and at Camp Derāmalāi. It is an inveterate skulker and all that has been written about the habits of the Streaked Grass-hopper Warbler applies to it in every detail. In patches where it occurs I found its population to be not denser than about one bird—or more rarely a pair—to an acre, and the individuals always keep widely scattered. In the mornings usually while the grass is still heavily sodden with dew, and also in the late afternoons about sunset, single birds were occasionally observed clambering up the grass stems to exposed situations near the tips and uttering a feeble 'pink, pink', etc. somewhat similar to but louder than that of the Red Munia (*Amandava*). The flight is indirect and top-heavy like that of *Prinia* or *Cisticola*, and the broad graduated tail conspicuous on the wing.

Neither Fairbank nor Terry record this species in their Pālni lists though specimens collected by them in those hills are now in the British Museum.

In Ceylon it is believed to occur, but rarely.

Breeding: No nests appear to have been taken in Travancore. Bourdillon considered that they were breeding there in April and this presumption is partly supported by the evidence obtained by the Survey. Specimen No. 661 (25 April—fresh plumage) had testes enlarged to 6×4 mm. and in No. 662 (same date—undergoing complete moult) they measured 6×3 mm. and suggested that the birds were breeding or about to. The organs in all the 3 October specimens were enlarged to breeding condition. In Belgaum, Col. A. E. Butler and Mr. T. R. Bell took many nests in September. Is it double-brooded or is there no definite season?

Phragmaticola aëdon (Pallas). The Thick-billed Warbler.

Specimens collected: 68 ♀ 12-1-33 Marāiyūr 3,500 ft.; 154 ♀ 25-1-33 Sānthānpāra 3,500 ft.; 225 ♀ 6-2-33, 252 ♀ 9-2-33 Thattākād 200 ft.; 450 ♀ 17-3-33, 460 ♂ 18-3-33 Rājampāra 1,350 ft.; 967 ♂ 12-12-33 Pādagiri 3,000 ft.

Elsewhere not noted.

Colours of bare parts: Iris hazel-brown to olive-brown; upper mandible horny-brown, lower yellowish flesh colour; gape and mouth bright orange yellow; legs and feet plumbeous; claws horny-brown.

[Measurements:

	Bill.	Wing.	Tail.	Tarsus.
3 ♂♂	19.5-21	84.5-86	88-90.5	27-29 mm.
5 ♀♀	18-20.5	78.5-84	83-87	26-29 mm.

All the Survey specimens are of the fulvous-brown type of colouration.—H. W.]

Ferguson says (*J.B.N.H.S.*, xv, 457) that in Travancore 'it is a very occasional winter visitor. I have only one specimen shot at the foot of the hills'. In view of this statement it is interesting to record that the Surveys found this species fairly common between 12 December and 18 March in suitable localities, at elevations from 200 up to 3,500 ft. in both Travancore and Cochin. Its favourite haunts are the patches of tall grass and weeds that so luxuriantly overrun abandoned forest clearings, and the growth of grass tussocks and bracken bushes on water-logged ground in ravines etc. through tea and coffee plantations.

As it hops about the undergrowth it utters a loud, harsh quick-repeated 'tshuck, tshuck' and 'chr-r' etc., the latter like the agitated notes of the Black-headed Babbler (*Rhopocichla*), but louder. These calls are sufficiently distinctive, with a little practice, to proclaim its identity long before a glimpse of their skulking producer can be obtained.

It has not been recorded from the Pālni Hills or from Ceylon.

Hippolais rama rama (Sykes). Sykes' Tree-Warbler.

Specimen collected: 543 ♀ 8-4-33 Cape Comorin ca. S.L.

Elsewhere not noted: Possibly confused with *Acrocephalus dumetorum*.

Colours of bare parts: Iris olive-brown; fine rim round eye (eyelids) magenta; upper mandible horny-brown, lower pinkish flesh colour; mouth orange-yellow; legs, feet and claws brownish flesh colour.

This species is apparently a fairly common winter visitor to Southern India but I do not record sight observations as it is not easy to differentiate it with certainty in the field from the commoner *Acrocephalus dumetorum*, while the habits and call notes of the two are also practically indistinguishable. The specimen was in fresh plumage and very fat, suggesting that it was ready to emigrate.

Curiously enough the only other example recorded from Travancore (*J.B.N.H.S.*, xv, 457) was also obtained at Cape Comorin (December 1901).

***Phylloscopus affinis* (Tickell).** Tickell's Willow-Warbler.

Not procured or noted by the Surveys, but Ferguson (*J.B.N.H.S.*, xv, 457) records specimens obtained during the winter months from the High Range of Travancore at 6,000 ft. elevation—never in the plains.

In the Pālmi Hills it is apparently common at Pulungi and one collected by Fairbank on 3 April is now in the British Museum. It does not seem to migrate as far south as Ceylon.

[*Phylloscopus inornatus humei* (Brooks). Hume's Willow-Warbler.

Not procured by the Surveys, neither is it mentioned in Ferguson's Travancore list nor in those of Fairbank and Terry for the Pālmi Hills. On what authority it is stated in the *Fauna* (ii, 469) to extend in winter as far south as Travancore is not known.]

***Phylloscopus nitidus nitidus* Blyth.** The Green Willow-Warbler.

Specimens collected: 25 ♂ 7-1-33, 94 ♂ 14-1-33 Marāiyūr 3,500 ft.; 235 ♀ 7-2-33, 244 o? 8-2-33 Thattākād 200 ft.; 447 ♂ 16-3-33 Rājampāra 1,350 ft.; 920 ♂ 29-11-33 Wadakkācheri 400 ft.; 1019 o? 26-12-33 Karūpa-danna ca. S.L.

[There is a specimen with no data from Mynall in the British Museum by Bourdillon.

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
4 ♂ ♂	12-13.5	63-67	48-49.5	19-19.5 mm.
1 ♀	13	62.5	48	18 mm.—H. W.]

***Phylloscopus nitidus viridanus* Blyth.** The Greenish Willow-Warbler.

Specimens collected: 119 ♂ 20-1-33 Münnār 5,000 ft.; 365 ♀ 27-2-33 Kūmili 3,000 ft.

[Measurements:

	Bill.	Wing.	Tail.
1 ♂	14	64	48 mm.
1 ♀	13	58	— mm.—H. W.]

Elsewhere noted at: Kottāyam (ca. S.L.); Peermade (3,200 ft.); Tenmalāi (500 ft.); Chālakūdi; Kūriārkūtti (1,600 ft.); Nemmāra (300 ft.); Pādāgiri (3,000 ft.).

Colours of bare parts: Iris brown; bill, upper mandible and tip of lower horny-brown, commissure and rest of lower mandible pale flesh colour; mouth pale yellow and greyish-pink, or yellow; in some individuals gape also yellow; legs and feet greenish-grey or pale horny-brown; soles yellowish.

I treat these two forms together as I am totally unable to distinguish them in the field. The call-notes of the Willow-Warblers once ascertained by properly authenticated specimens, appear to me to be the most satisfactory guide to distinguishing many of the confusing species in life, but in the case of these two they are so similar that this method fails.

Both the Green and the Greenish Willow-Warblers are common winter visitors to Travancore and Cochin, the low country as well as to at least 5,000 ft. up in the hills. The latest record I have is 27 March by which date the majority of birds had certainly departed. Ferguson (*J.B.N.H.S.*,

xv, 458) shot two specimens as late as July and suggests that some may remain through the summer.

They are usually met singly hopping about amongst undergrowth and the foliage of trees both in deciduous and, to a lesser extent, in evergreen jungle, uttering a merry, penetrating '*chi-wec*' at intervals of a few seconds. The Surveys also found them invariably present among the fruit gardens about backwater homesteads and in wooded compounds of the larger towns.

They have apparently not been recorded from the Pāl̄ni Hills where they must doubtless occur. Both forms are also winter visitors to Ceylon, the latter having occurred in the island in March.

Phylloscopus magnirostris Blyth. The Large-billed Willow-Warbler.

Specimens collected: 165 ♂ 26-1-33 Sānthanpāra 3,500 ft.; 328 ♀ 22-2-33 Peermade 3,200 ft.; 862 o? 14-11-33 Kūriārkūtti 1,600 ft.

Elsewhere noted at: Kūmili (3,000 ft.—Periyār Lake Environs); Kūvālle Incline (Cochin Forest Tramway); Chālakūdi; Wadakkāncheri (400 ft.); Pādāgiri (3,000 ft.—Nelliampathy Hills).

Colours of bare parts: Iris hazel brown; bill horny-brown, pale flesh colour at gape, chin, commissure and tip of lower mandible; mouth pale pinkish-yellow; legs, feet and claws greyish-brown or brownish-slate.

[Additional specimen seen:

Brit. Mus. Coll.: ♀ 15-11-74 Mynall (Bourdillon).

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
1 ♂	15	73	54	19 mm.
1 ♀	14.5	62.5	47.5	18.5 mm.—H. W.]

The Large-billed Willow-Warbler is also a common winter visitor to this area, the latest date I have being 7 March. In my experience it is far more partial to evergreen forest than the two foregoing, and commoner than either the Green or the Greenish Willow-Warbler in the sholas (up to 4,000 ft. !). William Davison (*Ibis* 1883, pp. 146-7) also found it very common 'in the Travancore Hills'. In the short time he was there he collected 19 specimens and says he could easily have got 50 more.

The call-note is a mousy, interrogative '*whec-chi?*', besides which a short feeble song was occasionally heard.

It has not been recorded from the Pāl̄ni Hills. In Ceylon it is a winter visitor.

Phylloscopus occipitalis occipitalis (Blyth). The Large Crowned Willow-Warbler.

Specimens collected: 124 ♂ 22-1-33 Sānthanpāra 3,500 ft.; 372 o? 28-2-33 Kūmili 3,000 ft.; 430 ♀ 9-3-33 Camp Derāmālāi 3,000 ft.; 981 ♂ 15-12-33 Pādāgiri 3,000 ft.

Elsewhere noted at: Thattākād (200 ft.).

Colours of bare parts: Iris brown; bill, culmen brown, commissure, tip and lower mandible pale orange-yellow; mouth pale yellow; legs, feet and claws greyish-brown or brownish-slate; soles pale yellow.

[Measurements:

	Bill.	Wing.	Tail.	Tarsus.
2 ♂♂	13-13.5	66-68	54	17 mm.
1 ♀	13.5	61	45	19 mm.—H. W.]

A common winter visitor to Travancore and Cochin. Last noted 9 March. This Warbler is confined to evergreen forest mostly on the hills between 2 and 4,000 ft. elevation, but it also occurs in this biotope in the low country. Unlike the preceding 3 species, it is gregarious in its habits and moves about in active flocks of from 10 to 30 birds amongst the foliage of lofty trees in sholas, searching the sprigs for insects. They were invariably found in association with other small birds such as *Culicicapa*, *Zosterops*, *Machlolophus*, *Muscicapula pallipes* and *Alcippe poiocephala*.

It has not been recorded from the Pāl̄ni Hills or from Ceylon.

Prinia socialis socialis Sykes. The Ashy Wren-Warbler.

Specimens collected: 147 ♂ 24-1-33 Sānthānpāra 3,500 ft.; 351 ♂ 24-2-33 Peermade 3,200 ft.; 407 ♂ 5-3-33, 416 ♂ 7-3-33 Kūmili 3,000 ft.; 431 ♀ 10-3-33 Camp Derāmalāi 3,000 ft.

Elsewhere noted at: Rājampāra (1,350 ft.); Balamore Estate (2,000 ft.—Ashāmbū Hills).

Noted as absent in Cochin at the following places: Kūriārkūtti (1,600 ft.); Wadakkāncheri (400 ft.); Nemmāra (300 ft.); Pādagiri (3,000 ft.); Trichūr.

[Additional specimen examined:

Trivandrum Museum Coll.: ♂? 2-1-04 Arnakal.

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
4 ♂ ♂	14	48-50.5	60-65	20-20.5 mm.
1 ♀	14.5	46	55	— mm.

All specimens in winter plumage.—H. W.]

The Ashy Wren-Warbler is a resident species in Travancore, not uncommon where it occurs, but curiously patchy in its distribution. During the whole of the Cochin Survey it was noted as 'absent'. It frequents tall grassland on the hillsides (between 1,500 and 3,500 ft.!) and was not observed in the low country at all though Ferguson states (*J.B.N.H.S.*, xv, 458) that it is found in suitable localities there. At Wūdāmet in the Cardamom Hills (ca. 3,000 ft.) it was common among the matted grass and reedbeds in the water-logged hollows or 'valleys' where the birds appeared to have concentrated owing to the burning of the grass on the surrounding hilltops.

Fairbank (*S.F.*, v, 406) obtained a specimen on a grassy hillside at 6,000 ft. in the Pālñi Hills, but he does not say anything about its numbers there. Terry says (*S.F.*, x, 476) that it is not uncommon on the slopes in the long grass near Pulungi and Pittur. It is represented in Ceylon by the slightly smaller and shorter tailed race *P. s. brevicauda* Legge.

Breeding: The gonads of all the Survey specimens were in normal non-breeding condition. According to T. F. Bourdillon (*J.B.N.H.S.*, xv, 458) this Wren-Warbler 'breeds [in Travancore] most abundantly on the lower slopes of the hills in May and June and also in July'.

Prinia sylvatica sylvatica Jerdon. The Jungle Wren-Warbler.

Specimens collected: 627 ♂ 19-4-33, 630 ♂ 20-4-33, 639 ♂, 640 ♀ 21-4-33 Arāmboli 250 ft.

Elsewhere not noted.

Colours of bare parts: Iris bright brownish-yellow or orange-brown; rim round eye (eyelids) paler; bill blackish-brown, paler at chin and on gonys; mouth brownish-slate or pink with brownish streaks; legs and feet brownish flesh colour; claws horny-brown.

[No other specimens seen.

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
3 ♂ ♂	14.5-16.5	61-62	67-67.5	22-23.5 mm.
1 ♀	14	53.5	57.5	— mm.

All in winter plumage. These are the first specimens I have seen from Travancore and they agree definitely with the typical form and not the Ceylon race.—H. W.]

The Jungle Wren-Warbler has apparently not been recorded from Travancore before. The Survey met with it only at Arāmboli at the southern end of the Ashāmbū Hills and on the western extremity of the gap or pass through the Ghats leading into the drier district of Tinnevely (Madras Presidency). It frequented steep boulder-strewn hillsides with sparse cactus and thorn bushes where males were constantly observed perching on the boulders or in exposed positions on bushes and warbling 'Pretty-pretty', etc. reminiscent of a Tailor-bird's call, but louder and easily distinguishable from it. It

was repeated for three minutes or more at a stretch and resumed after a pause of two or three seconds. Each 'pretty' of the song is preceded by a curious subdued ventriloquistic 'pit' uttered in a different key. The birds were extremely wary and difficult to approach. Their absence from the rest of Travancore and from Cochin suggests that their habitat is confined to broken, boulder-covered hills with sparse and stunted vegetation, a facies which does not occur elsewhere within the area.

It has not been recorded in the Pālñi Hills. The race *P. s. valida* represents it in Ceylon.

Breeding: From the excited behaviour of the birds at the time (middle to end April) it was evident that they were nesting. No. 627 (19 April) had testes enlarged to 6×4 mm. and on the same date another bird was observed carrying building material. In No. 639 (21 April) the testes measured 5×4 mm. Its pair, 640, had probably finished laying but there was a conspicuous incubation patch present. From the agitated behaviour of this pair—hopping about the bushes and uttering 'pit-pit-pit-pit', etc.—it was clear that they had a nest (or young ?) in the neighbourhood.

Prinia inornata franklinii Blyth. The South Indian or Nilgiri Wren-Warbler.

Specimens collected: 194 ♀ (imm.) 30-1-33 Sānthanpāra 3,500 ft.; 241 ♂, 242 ♂ 8-2-33, 276 ♀ (imm.) 12-2-33 Thattākād 200 ft.; 284 ♂, 285 ♀ 15-2-33 Kottāyam ca. S.L.; 389 ♀ 3-3-33 Kūmili 3,000 ft., 434 ♀ 10-2-33 Camp Derāmalāi 3,000 ft.; 1005 ♂ 25-12-33, 1016 ♂ 26-12-33, 1050 ♀, 1051 ♂ 31-12-33 Karūpadanna ca. S.L.

Elsewhere noted at: Peermade (3,400 ft.); Wadakkācheri (400 ft.—only 1 in a paddy-field; unconfirmed !); Nemmāra (300 ft.—very scarce).

Colours of bare parts: *Adult*: Iris and eyelids brownish-yellow or orange-straw colour; bill, upper mandible and tip of lower horny-brown, rest of lower mandible pale flesh colour; mouth blackish-brown, brownish flesh colour or pale pink with brownish streaks and blotches (probably seasonal); legs and feet brownish flesh colour; claws dusky. *Immature*: Iris pale khaki; gape and eyelids yellow; mouth pinkish-yellow; legs and feet as in adult but with a pinkish flush.

[Measurements:

	Bill.	Wing.	Summer tail.	Winter tail.
4 ♂ ♂	13.5	47-50.5	53-55.5	— mm.
2 ♀ ♀	12.5-13	48.5-49	50.5-51	— mm.
3 ♀ ♀	12.5-13.5	46-49	—	57.5-63 mm.

Nos. 241, 242, 284, 285, 1005, 1016, 1050 and 1051 are all in breeding plumage which is evidently assumed by a complete pre-nuptial moult about December. Nos. 194, 276, 389 and 434 are either birds in juvenile plumage or in their first winter plumage, evidently agreeing with the adult winter plumage in colour and greater length of tail. The series has therefore satisfactorily cleared up the point—shown in the Eastern Ghats Survey, *J.B.N.H.S.*, xxxvi, 577, as obscure—that in this race the relationship between the summer and winter plumages¹ is in line with that of the other continental forms and not as in the Ceylon race. These plumages are much darker and browner than in the typical race with the tail markings more distinct. The difference between them of course accounts for Ferguson's belief that two forms of this Wren-Warbler were to be found in Travancore.—H. W.]

This Wren-Warbler is common among the grassy bunds and paddy-fields about the backwaters both in Travancore and Cochin, and is also found to a lesser extent in undulating grassland in deciduous country and on the hills in similar facies up to at least 4,000 ft. elevation. Ferguson (*J.B.N.H.S.*, xv, 459) found it up to 6,000 ft. ("*P. jerdoni*"). I did not come across it in the Nelliampathy Hills at all. Its distribution is patchy and capricious, the birds being absent from many areas to all appearances eminently suited to them.

In the Pālñi Hills, Fairbank (*S.F.*, v, 406) observed it chiefly above 5,000 ft. elevation in long grass and fern thickets. In Ceylon it is represented by the race *P. i. insularis* (Legge).

¹ Or more intelligibly in Travancore 'breeding and non-breeding plumages.'

Breeding: The earliest date on which nesting activity was noted was 8 December (Nemmnāra) when a bird was observed carrying building material—a strip of paddy leaf. No. 1016 (26 December) had its testes enlarged to 6×4 mm. and it was undergoing complete pre-nuptial moult. Nos. 194 (30 January) and 276 (12 February) were immature with imperfectly ossified skulls and evidently lately out of nest. In 285 (15 February) the ovarian follicles measured 1-1.5 mm. At this time males were warbling excitedly from exposed perches on grass or paddy stems and chasing each other about. An individual was observed carrying a green caterpillar in its bill and from all these signs it was obvious that breeding was in progress.

From the evidence obtained, the breeding season in Travancore-Cochin appears to be earlier than that given for the Nilgiris (March to July), but how long it continues here is not known. The two specimens obtained on the hills in March had undeveloped gonads.

FAMILY: IRENIDÆ.

Irena puella puella (Latham). The Fairy Blue-bird.

Specimens collected: 28 ♂, 29 ♀ 7-1-33 Marāiyūr 3,500 ft.; 462 ♂ 18-3-33 Rājampāra 1,350 ft.; 971 ♂ 12-12-33, 975 (not sexed—alcohol sp.) 13-12-33, 979 (not sexed—alcohol sp.) 14-12-33 Pādagiri 3,000 ft.

Elsewhere noted at: Sānthanpāra (3,500 ft.); Thattākād (200 ft.); Ūrumbikera Reserve Forest (ca. 1,000 ft.—near Mūndakāyam); Peermade (3,200 ft.); Kūmili (3,000 ft.—Periyār Lake Environs); Tenmalāi (500 ft.); Balamore Estate (2,000 ft.—Ashāmbū Hills); Kūvalle Incline (Cochin Forest Tramway); Kūriārkūtti (1,600 ft.).

Colours of bare parts: Iris claret or scarlet; bill in ♂ black, in ♀ brownish-black; mouth greyish-pink; legs, feet and claws black.

[Additional specimens examined:

Brit. Mus. Coll.: Ad. ♂♂ 12-12-78, 24-7-78, 20-11-74, 11-11-78 and -10-78; ♀♀ 5-12-78, 29-11-78 Mynall (Bourdillon).

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
9 ad. ♂♂	27.5-30	124.5-134	100-106	18-18.5 mm.
3 ♀♀	27-30	127-127.5	101.5-104	17.5 mm.

The juvenile plumage is a dull edition of that of the adult female except that the wings and their coverts have very little of the blue-green wash and the lower parts are dull sooty-black with only a few feathers blue-green. The first primary is softer and rather more rounded than in the adult while the tail feathers are narrower. The first winter male resembles the adult female still more closely, but I have not seen enough material to work out the moults.—H. W.]

The Fairy Blue-bird is a resident of evergreen forest and is found in Travancore and Cochin wherever this biotope occurs both in the low or foot-hills country (cf. Thattākād) and up in the highest sholas. Parties of 7 or 8 birds are commonly met with flying about among the lofty tree-tops uttering a pleasant musical 'ueet-ueet' as they do so. They also occasionally descend into low bushes to feed on various berries. They are very fond of the various species of *Ficus* figs, and flowers of *Erythrina lithosperma* shade trees in coffee estates are regularly visited for the nectar. Two of the specimens shot off these had pollen adhering to their chin feathers. The call-note most usually heard is a rich, mellow, percussive 'Whats it' repeated every few seconds.

Fairbank (*S.F.*, v, 406) records this species as common in the Pālani Hills from their base up to 4,500 ft. In Ceylon it is probably only a straggler.

Breeding: The birds were evidently breeding in March. Specimen No. 462 (18 March) had its testes enlarged to 11×7 mm.; it was in fresh plumage and was observed tugging at dry twigs for a nest.

According to T. F. Bourdillon (*J.B.N.H.S.*, xv, 262) it builds in Travancore at elevations between 500 and 3,000 ft. above sea level from January to May Kinloch took eggs in the Nelliampathy Hills on 26 February, and

Stewart in Travancore in every month from January to June. Most eggs are said to be found in March and April. The normal clutch is almost invariably 2 eggs, but c/3 has once been taken and one incubated egg is occasionally found (*Nidification*, ii, 497).

FAMILY: ORIOLIDÆ.

Oriolus oriolus kundoo Sykes. The Indian Oriole.

Specimens collected: 269 ♂ 11-2-33 Thattākād 200 ft.; 486 ♀ 24-3-33 Tenmalāi 500 ft.

Elsewhere noted at: Sānthanpāra (3,500 ft.); Kottāyam (ca. S.L.); Kūmili (3,000 ft.); Kūriārkkūtti (1,600 ft.); Wadakkācheri (400 ft.); Nemūāra (300 ft.); Pādāgiri (3,000 ft.—Nelliampathies); Trichūr Town; Karūpadanna (ca. S.L.).

Colours of bare parts: Iris brownish-scarlet; bill reddish-brown; mouth pinkish flesh; legs and feet slate; claws horny-brown.

[Other specimens examined:

Brit. Mus. Coll.: ♀ 13-11-78 Trivandrum; ♀ 11-3-77, ♀ 20-12-78 Mynall (Bourdillon).

In the *Ibis* 1916, pp. 56-7, Dr. C. B. Ticehurst made some notes on the plumages of a series of orioles collected by me in Jhelum District, Punjab. That account is now expanded after the examination of a considerable amount of fresh material.

In juvenile plumage (presumably of both sexes), the crown, ear coverts and hind-neck are yellowish-green with an indistinct dusky loreal band; upper parts olive-green with pale tips to the feathers; upper tail coverts bright yellow; wings dark brown, all the lesser and median coverts and the tertiaries washed with olive-green and with pale tips; primary coverts dark brown, the ends of the feathers with well-defined yellow edges; primaries and secondaries dark brown, edged with greyish-white; tail olive-green all but the central pair of feathers with bright yellow tips to their inner webs, broadest towards the outer feathers. The underparts are white, washed with pale yellow on the flanks, all the feathers with dark brown shaft streaks except on the chin and throat; undertail coverts bright yellow.

The post-juvénal moult takes place about August. The male in first winter plumage has the whole of the upper plumage and sides of the head except for an indistinct dusky loreal band, greenish-yellow, brightest on the supercilium and rump and dullest on the wing coverts; the primaries and secondaries, the primary, median, and greater wing coverts and the tail are retained from the juvenile plumage. Lower plumage greyish-white, the sides of the breast, the flanks and the undertail coverts golden yellow, the breast and flanks having broad blackish-brown shaft streaks.

The male in second winter plumage is very similar but the loreal streak is darker and better defined and there is more yellow on the lower plumage. This stage may however be easily recognised by the primary coverts which have their yellow tips much wider and yellower, forming a distinct yellow patch, while the lesser wing coverts are irregularly blotched with brownish-black.

Third winter males are still brighter and yellower on the upper parts; the lower plumage is bright orange-yellow throughout, almost but not quite as clear as in the adult, and the shaft streaks are narrow, indistinct and sometimes absent. The wings now resemble those of the adult being black with a yellow patch on the primary coverts and distinct yellow tips to most of the primaries and secondaries. The lesser and median coverts, the tertiaries and to a lesser extent the secondaries are still, however, much washed with olive-green while the yellow patch on the primary coverts is neither so large nor so pure as in the adult. The tail in this stage is also distinctive: the central pair of feathers is olive-green with black tips and a terminal yellow triangular spot, the amount of yellow in the other feathers being greater than in the last stage.

Finally the adult male plumage—as described in all text-books—is assumed at the fourth autumn. The brown iris of the juvenile has become red by the first summer, the males breeding in their first year in spite of the much longer period necessary for the assumption of full plumage.

The first winter female only differs from the first winter male in having the under plumage whiter, lacking most of the yellow wash on the breast and flanks.

In second winter plumage she appears to be quite indistinguishable from the male of a similar age, while the adult plumage—of the text-books—is assumed in the third winter, that is at the post-nuptial moult at the end of the second breeding season.

The autumn moult is always complete except in the case of the first, viz. the post-juvénal moult when the wings and tail are retained from the juvenile plumage as mentioned above. There appears to be no spring moult.

It is not quite clear to me whether some females attain a plumage similar to that of the adult male. I have seen birds, which on plumage could certainly not be distinguished from adult males, marked as females but there was nothing to show whether the sexing was reliable.¹ There is, however, one adult female in the Scully Nepal Collection in the British Museum which differs from the adult male only in having the central pair of tail feathers green with black tips. This is reliably sexed as there is a drawing of the enlarged ovary on the label.—H. W.]

The Indian Oriole is, as Ferguson observes (*J.B.N.H.S.*, xv, 461) sparingly met with in the low country of Travancore and also in the hills, in my experience up to about 3,500 ft. elevation. According to him it is a resident species. The Survey noted it as most abundant at camps between 25 January and the end of March. By about the middle of April it was not in evidence at all and it seems more than probable that the majority of birds had left. Kinloch (*J.B.N.H.S.*, xxvii, 941) describes it as 'very common' in the Nelliam-pathy Hills at what season he does not say, and its status there is presumably the same as in Travancore. The Cochin Survey found it only moderately common at Pādagiri in December.

This Oriole frequents open secondary forest either deciduous or with a mixture of evergreen species, well-wooded compounds and groves of trees about cultivation, and is often met with in the localised bird associations. It was observed feeding largely on Peepal figs (*Ficus religiosa*), Lantana berries and on the nectar of *Erythrina lithosperma* blossoms.

It has apparently not been recorded in the Pālmi Hills or in Ceylon.

Breeding: The gonads of the specimens were in a quiescent state and no record of its breeding in Travancore or Cochin exists.

***Oriolus chinensis diffusus* Sharpe.** The Indian Black-naped Oriole.

Specimen collected: No. 451 ♀ (imm.) 17-3-33 Rājampāra 1,350 ft.

Elsewhere noted at: Thattākād (200 ft.).

Colours of bare parts: Iris brown, rest as in *kundoo*.

[Measurements:

Bill.	Wing.	Tail.
33	149	93.5 mm.—H. W.]

This oriole was observed singly in small numbers in secondary mixed deciduous-and-evergreen jungle on the edge of rubber plantations. One was feeding on 'Omé' berries (*Trema orientalis* Blume).

Ferguson (*J.B.N.H.S.*, xv, 461) describes it as an occasional winter visitor to the low country in Travancore and says that he has only one specimen obtained in Trivandrum. Mr. Whistler has examined five further Travancore specimens in the British Museum (Fry, Bourdillon, Anjängo) with no more precise data.

It is a straggler in winter to Ceylon.

***Oriolus xanthornus maderaspatensis* Franklin.** The South Indian Black-headed Oriole.

Specimens collected: 690 ♀ imm. 18-7-33 (Pūlayanārkotta 200 ft.); 745 ♂

¹ I agree with this as I have watched several breeding pairs of adults during the last two seasons (Dehra Dun) in which the male could not be distinguished from the female by colour.—S. A.

imm. 29-7-33 (Küttāni 300 ft.); 832 ♂ ad. 11-8-33 (Pūlayanārkotta 200 ft.) Trivandrum Tālūk.

Elsewhere noted at: Marāiyūr (3,000 ft.); Thattākād (200 ft.); Kottāyam (ca. S.L.); Tenmalāi (500 ft.); Trivandrum Town (ca. S.L.); Wadakkācheri (400 ft.); Nemmāra (300 ft.); Karūpadanna (ca. S.L.).

Colours of bare parts: *Adult*: 'Iris crimson; bill horny pinkish-brown, darker at tip; mouth pale greyish-pink; legs and feet bluish; claws horny-black' (Pillai). *Immature* (Nos. 690 and 745): 'Iris blackish-grey and light blue [?]; bill slaty-black; mouth grey and pink; legs and feet blackish-grey (690), bluish-grey (745); claws horny-brown' (Pillai).

[Additional specimens examined:

Brit. Mus. Coll.: ♂ 19-11-70 Trivandrum (Bourdillon), ♂ undated Trivandrum (Fry), ♂ 8-5-77 Lower Pālnis (Fairbank).

Measurements:

	Bill.	Wing.	Tail.
3 ad. ♂ ♂	29-32	132.5-139.5	83-86.5 mm.
1 imm. ♂	29	133.5	86 mm.
1 imm. ♀	26	126.5	79 mm.—H. W.]

The Black-headed Oriole is a common resident species in Travancore and Cochin. It is found in the low country, usually under 500 ft. elevation, and excepting Marāiyūr (3,000 ft.)—where it was fairly common in open deciduous forest about the terraced paddy-fields in the valley—it was not met with at all in the hills. Kinloch (*J.B.N.H.S.*, xxvii, 940) also states that it does not occur in the Nelliampathy Hills at any season. In the Pālni Hills, however, Fairbank (*S.F.*, v, 406) met with it from the base up to 5,000 ft. I hazard a guess that Fairbank's statement refers only to the eastern and drier side of the hills where the facies is of a nature more suited to this species.

In Ceylon it is represented by the endemic race *O. x. ceylonensis* Bonaparte.

Breeding: There are no published records of the breeding of the Black-headed Oriole in the Travancore-Cochin area. Two of the specimens obtained by Mr. Pillai at the middle and end of July, however, were immature with—according to the collector—imperfectly ossified skulls. Both of these are in fresh first winter plumage.

Over the greater part of its range, it breeds from February to July—principally April and May (*Fauna*, iii, 12). The Ceylon race, according to Wait breeds in the island from October to May (*Nidification*, iii).

FAMILY: EULABETIDÆ.

***Gracula religiosa indica* (Cuvier).** The Southern Grackle.

Specimens collected: 427 ♂ 9-3-33 Camp Derāmālāi 3,000 ft.; 500 ♂ 27-3-33 Tenmalāi 500 ft.

Elsewhere noted at: Mūnnār (5,000 ft.—Kanan Devan Hills); Sānthanpāra (3,500 ft.—Cardamom Hills); Thattākād (200 ft.); Ūrūmbikera Reserved Forest (ca. 1,000 ft.—near Mūndakāyam); Peermade (3,200 ft.); Kūmili (3,000 ft.—Cardamom Hills); Rājampāra (1,350 ft.—Panthalam Hills); Balamore Estate (2,000 ft.—Ashāmbū Hills); Kūriārkūtti (1,600 ft.—Annemalāi Hills); Pādagiri (3,000 ft.—Nelliampathy Hills).

Colours of bare parts: Iris brown; bill orange with yellow tip; mouth, palate yellow, gullet pink; wattles and infra-orbital skin bright yellow; legs and feet orange-yellow; claws blackish-brown.

[Additional specimens seen: 3 from Lower Pālnis (Fairbank).

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
2 ♂ ♂	29-30	142.5-149	66-67	29-31 mm.

This race also occurs in Ceylon where its exact relationship with the Ceylon Grackle (*Gracula ptilogyns*) is not very clear. Both are birds of very local distribution in the island and in the main their ranges do not appear to coincide. This latter form is usually attributed to a distinct species because of the suppression of the wattle on the ear coverts though a

division in the feathers suggests its comparatively recent suppression. As, however, the variation in the wattles is a subspecific character elsewhere and the ranges of the two birds in Ceylon have possibly been confused by the process of deforestation, it appears probable that *ptilogenys* is in reality nothing more than a race of *religiosa*.—H. W.]

The Grackle or Hill Myna is one of the commonest birds on the forested hills of Travancore and Cochin. The Survey has noted it in evergreen forest as low down as Thattākād (200 ft.) and it also occurs in the forest-clad foothills, but most abundantly at between about 1 and 4 thousand ft. elevation, and in lesser numbers up to at least 5,000 ft. It is partial to the lofty shade trees in cardamom plantations feeding on the ripe fruit of *Calophyllum wightianum* (?) and of the various species of *Ficus* scattered about these sholas, in company with hornbills, barbets, green pigeons and other frugivorous birds. Flocks of up to 20 or more birds are commonly met with. Their wings produce the same whirring sound as green pigeons' and some of their loud, sharp call-notes may easily be mistaken for those of the Black Bulbul (*Microscelis*). They also feed largely on nectar from the flowers of *Bombax malabaricum* in forest, and *Grevillea robusta* and *Erythrina lithosperma* shade trees in tea and coffee plantations. I have frequently observed pollen adhering to their chin and forehead feathers and have no doubt that they assist considerably in the cross-pollination of these species.

One bird of a pair noted at Rājampāra (16 March) had the abdomen and vent white; its mate was normally coloured.

In the Pālñi Hills this Grackle is common up to 4 or 5,000 ft.

Breeding: No. 427 (9 March) had testes enlarged to 8×4 mm. and a conspicuous incubation patch, and was one of a pair. In No. 500 (27 March) the testes measured 8×5 mm. and it also had a prominent incubation patch. On 4 March a pair were observed carrying fine twigs into a hole in a dead tree-trunk standing in the Periyār Lake at a height of about 25 ft. from the surface of the water. On 20 March another pair was observed building in a hollow in a dead tree-trunk on the edge of Lahāi Rubber Estate (Rājampāra) about 40 ft. up. By this time birds were mostly in pairs when not congregated to feed, and breeding was obviously in progress generally.

According to Stewart (*Nidification*, ii, 506) the breeding season in Travancore is February to April—earliest date for eggs 6 February, latest 28 April. He says that in July some birds seem to breed again as he has taken fresh eggs on the 28th of that month. Bourdillon took a nest on 27 May. The full clutch consists of 3 eggs, but sometimes only two are laid.

FAMILY: STURNIDÆ.

Pastor roseus (Linn.). The Rosy Pastor or Rose-coloured Starling.

Specimens collected: 354 ♂ 25-2-33 Peermade 3,200 ft.; 603 ♀, 604 ♂ 16-4-33 Arāmboli 250 ft.; 953 ♂ 7-12-33 Nemmāra 300 ft.

Elsewhere noted at: Thattākād (200 ft.); Kūmili (3,000 ft.).

Colours of bare parts: Iris hazel brown; upper mandible and tip of lower mandible horny-brown, gape and rest of lower mandible pale yellow; mouth, palate yellow, gullet pink; legs, feet and claws horny-brown.

[No other Travancore specimens seen.—H. W.]

Ferguson writes (*J.B.N.H.S.*, xv, 462): 'Found in large flocks both in the low country and on the hills from September to April usually. I have seen them as late as May occasionally.' This conveys the impression that the bird is a common winter visitor, but my experience both in Travancore and Cochin shows that it is decidedly rare and uncommon in these parts. The largest flock noted by the Travancore Survey comprised of about 10 birds; parties of 3 or 4 or single individuals amongst flocks of Grey-headed and Brahminy Mynas was more usual. The two seasons during which these areas were worked did not appear to be exceptional in any way, and therefore my experience and Ferguson's statement seem rather difficult to reconcile. The explanation doubtless is, however, that as in other parts of its winter as well as breeding range its numbers vary considerably from year to year

depending partly upon the abundance or otherwise of food supply, but partly also on factors which as yet we do not know.

The specimens shot or observed were feeding largely on the berries of *Lantana camara* and *Salvadora persica* and also on the nectar of *Bombax* flowers. The stomach of No. 953 (7 December) was crammed full of ripe *Lantana* berries exclusively. 56 seeds were recovered from the guts intact, some of which were on the point of being excreted. As I have noted elsewhere, the Pastor is undoubtedly one of the more important agents in the dispersal of this pernicious weed in India.

This bird has apparently not been recorded in the Pālni Hills. It is an irregular and uncertain winter visitor to Ceylon in small numbers.

Sturnia malabarica malabarica (Gmelin). The Grey-headed Myna.

Specimens collected: 41 ♀ 9-1-33, 97 ♂ 15-1-33 Marāiyūr 3,500 ft.; 545 ♂ 9-4-33 Cape Comorin ca. S.L.; 928 ♀ 1-12-33 Wadakkācheri 400 ft.

Sturnia malabarica blythii (Jerdon). Blyth's Myna.

Specimens collected: 255 ♂ 9-2-33 Thattākād 200 ft.; 453 ♂ 17-3-33 Rājampāra 1,350 ft.; 762 ♂ imm. 31-7-33 (Mārūthānkūzhi 50 ft.); 821 ♂ imm. 9-8-33 (Nettāyam 200 ft.) Trivandrum Taluk.

Elsewhere noted (both forms) at: Kottāyam (ca. S.L.); Kūmili and Periyār Lake Environs (3,000 ft.); Balamore Estate (2,000 ft.—Ashāmbū Hills); Kūriārkkūtti (1,600 ft.).

Colours of bare parts: Iris greyish- or creamy-white; bill yellow at tip, leaden blue at base with a greenish intervening area. In immature birds (Nos. 762 and 821) the green is replaced by brown; mouth, palate dusky yellow, gullet pinkish-grey or slaty; legs, feet and claws yellowish-brown, brownish-flesh or pale lemon yellow.

[Additional specimens seen:

B.N.H.S. Coll.: *malabarica* o? n.d. Thekadi, Travancore (Cook); ♀ 3-2-29 Kalathrupoli, Travancore (M. O. H. Beusley).

Brit. Mus. Coll.: *blythii* o? 9-3-76 Travancore (Bourdillon).

B.N.H.S. Coll.: ♂ 29-9-93 Thekadi (Cook).

The range and status of these two forms in Travancore and Cochin seem utterly confusing and it is impossible to say anything definite regarding them. The difficulty is heightened by the fact that both races may commonly be met with together and even in one and the same flock. Thus No. 928 (*malabarica*) was shot from a party which contained two or three undoubted *blythii*. In addition, there is every inter-gradation of colour between the grey-headed *malabarica* and the white-headed *blythii*, while it is practically impossible to tell females and immature males of the latter from *malabarica*.

On the whole, however, the specimens confirm that *blythii* is probably the breeding form in Travancore and that *malabarica* only appears in this area as a winter visitor. None of the specimens attributed to *malabarica* showed any gonadal development, while No. 255 (9 February—*blythii*) had its testis (only a single l) enlarged to breeding size—13×10 mm.—and 453 (17 March—*blythii*) to 10×7 mm. On 4 March, two pairs were observed building in holes in partially submerged tree-trunks in Periyār Lake which, judging from the males, were undoubted *blythii*. Several other pairs were also noted prospecting for nesting sites here between 28 February and 7 March, all of which seemed to belong to the white-headed form. A half-fledged young was brought in by an urchin on 25 March at Tenmalāi, but its parents were unfortunately not seen.

Specimen No. 545—an adult male *malabarica*—on the other hand showed no genital development on 9 April at which time *blythii* were breeding generally. Moreover it was very fat, a condition which at this season indicates in true migrants their readiness to depart. Whether it can be interpreted in the same light in the case of local migrants, as the Grey-headed Myna seems to be, is of course open to question.

In Travancore and Cochin, these Mynas frequent secondary jungle and the neighbourhood of cultivation usually in the low country and foothills, but also up to about 3,500 ft. elevation. They keep in flocks of 5 to 20 birds or more, and I found them feeding largely on *Lantana* berries, Peepal and

various other *Ficus* figs and the nectar of *Bombax malabaricum* flowers. On these trees they indulge in the same sort of squabbling, chatter and bellicosity as the Rose-coloured Starling. Occasionally they were also observed springing open *Loranthus* buds and probing into them for the nectar.

Fairbank (*S.F.*, v) does not record either of these forms in the Pālṇi Hills, but according to the *Fauna* (iii, 41) *blythii* breeds there and is apparently a resident.

This species is not found in Ceylon.

Breeding: On the evidence obtained by the Survey nesting of the white-headed form—*blythii*—in Travancore is in progress during March and April and probably also May.

Col. Sparrow took 2 fresh eggs at Kūmili (Cardamom Hills) on 4 April. He attributes these to the grey-headed typical race, but as he did not shoot the parents, the uncertainty remains.

Stewart and Bourdillon took eggs of *Sturnia m. blythii* in Travancore in March and April (*Nidification*, ii, 519).

Temenuchus pagodarum (Gmelin). The Black-headed or Brahminy Myna.

Specimen collected: 547 ♂ 9-4-33 Cape Comorin ca. S.L.

Elsewhere noted at: Kottāyam (ca. S.L.); Arāmboli (250 ft.); Chālakūdi and in the low country along the Cochin Forest Tramway; Wadakkācheri (400 ft.); Karūpadanna (ca. S.L.).

Colours of bare parts: 'Iris white; bill blue at base, bright yellow at tip; legs, feet and claws yellow' (Humayun Abdulali).

[Additional specimen seen:

Brit. Mus. Coll.: ♂ 6-6-77 Periakulam, E. base of Pālṇis (Fairbank).

The juvenile differs from the adult in being paler and duller throughout and lacking the crest, while the pronounced shaft streaks on the hackled tips to the feathers are wanting. Cap dark sooty brown. Ear-coverts and lower parts—save for the white vent and lower tail-coverts—are warm creamy unicolorous buff. The post-juvénal moult is complete and the first winter bird cannot be distinguished from the adult. There is no spring moult. The complete autumn moult takes place in October and November. The adult female differs from the male merely in having a shorter crest.—H. W.]

The Black-headed Myna is restricted in Travancore and Cochin to the low country under 500 ft. elevation, where it frequents deciduous and secondary scrub jungle about cultivation and human habitations. Flocks of up to 8 or 10 birds were not uncommon, often in association with other Mynas, and they fed extensively on Banyan figs, *Lantana* and *Salvadora persica* berries in the usual mixed company of frugivorous birds.

In the Pālṇi Hills Fairbank (*S.F.*, v, 407) obtained specimens at the base and also observed it well up on the hillsides, presumably on the eastern (drier) side.

In Ceylon it is confined to the dry coastal areas.

Breeding: The specimen (9 April) was very fat and its organs showed no departure from the quiescent condition. Ferguson (*J.B.N.H.S.*, xv, 462) does not comment upon the status of this Myna in Travancore. No records of its breeding there or in Cochin exist and it may be that, as in many other parts of its range, it is only a winter visitor to the area.

Acridotheres tristis tristis Linn. The Common Myna.

Specimens collected: 227 ♂ 6-2-33, 277 ♂ 12-2-33 Thattākād 200 ft.: 534 ♂ 8-4-33, 574 ♀, 575 ♂ 12-4-33 Cape Comorin S.L.; 621 ♂ 18-4-33, 632 ♀ 20-4-33 Arāmboli 250 ft.; 711 ♂ 23-7-33 (Beach); 747 ♂ imm. 30-7-33 (Veli, S.L.); 779 ♀ 3-8-33 (Kovālam ca. 70 ft.); 839 ♀ 12-8-33 (Beach) Trivandrum Town and Tālūk; 963 ♂ 9-12-33 Nemmāra 300 ft.

Elsewhere noted at: Marāiyūr (3,000 ft.); Kottāyam (ca. S.L.); Chālakūdi; Wadakkācheri (400 ft.); Trichūr Town; Karūpadanna (ca. S.L.); Ernākulam.

Colours of bare parts: *Adult*: Iris brown (according to Pillai 'outermost ring greyish-white, succeeded by a ring of fine silver spots surrounding a brownish-red ring which encircles the pupil'); bill yellowish except at sides

of base of lower mandible which are brownish-green; orbital skin bright yellow; mouth dark slate; legs, feet and claws yellow like bill, paler than the bare orbital skin. *Immature*: Iris 'blackish-grey' (Pillai); gape yellow; mouth more pinkish; orbital skin paler; rest as in adult. *Juvenile* ($\frac{1}{2}$ fledged): Iris brown; bill dusky yellowish flesh colour; gape yellowish-cream; mouth bright yellow; legs and feet pale yellowish-flesh; claws dusky.

[Measurements :

	Bill.	Wing.	Tail.	Tarsus.
7 ♂♂	25.5-30.5	139-150	81.5-90.5	38-40 mm.
3 ♀♀	26-27	138-142.5	78.5-85.5	35-39 mm.

This good series clearly establishes the fact that Mynas from Travancore are intermediate between *A. t. tristis* and *A. t. melanosternus* and some would be inclined to name them as another of the Travancore races. Compared with birds from N.-W. India they are certainly darker with a more purple tint on the lower plumage, and the white of the ventral patch is somewhat constricted. The upper parts average darker and closely resemble those of *melanosternus*. Below, however, they are not as dark as the latter and they have fewer traces of the extension of the black of the chin, throat and upper breast as a ventral band. I do not think, however, that the naming of this intermediate race would prove of value as the typical race is somewhat variable in colour and size and throughout its range a number of individuals approach these Travancore intermediates in colour. It is better to be content with the statement that while the Myna in India cannot be divided into races—as one might perhaps expect from the robust adaptability of this common bird—the fact may be remembered that it shows a tendency to develop a pale race in the extreme North-West and a saturated race in Travancore.—H. W.]

The Common Myna is an abundant and familiar resident species in the low country of both Travancore and Cochin. Apart from Marāiyūr which is in many respects an exceptional locality with a mixture of hills and plains features, it was not found at all above an elevation of about 400 ft. As elsewhere, it inhabits open country about cultivation and towns and villages.

In the Pālni Hills, Fairbank (*S.F.*, v, 407) found it common about villages at nearly 4,000 ft.

It is a common species in Ceylon.

Breeding: On 4 February (Thattākād) a pair was observed nesting in a hollow about 35 ft. up in a charred tree-trunk standing in a paddy-clearing in deciduous forest. When visited again on 6 February, this tree had been felled. Examination of the nest showed a partially fledged nestling sitting at the entrance, hale and hearty and quite unhurt by the fall! No. 277 (12 February) had testes enlarged to 8×5 mm. On 6 April (Cape Comorin) a nest was located in a hole in a palmyra palm trunk at about 20 ft., while another pair was observed building on 13 April. In specimen No. 534 (8 April) the testes measured ca. 5×4 mm. and appeared to be developing, whereas in other specimens at this time the gonads were as yet in a quiescent state. No. 621 (18 April) had testes measuring 9×5 mm., while 632 (20 April) had one hard shelled egg in its oviduct ready for laying, and the distended nature of this organ indicated that others had already been laid. Among the later specimens Nos. 711 (23 July) with testes measuring 12×6 mm. and 779 (3 August) with the largest ovarian follicle ca. 2 mm. in diameter were obviously breeding. No. 747 (30 July) was immature with imperfectly ossified skull.

Ferguson says (*J.B.N.H.S.*, xv, 462) that the Myna breeds in April in Travancore. The evidence shows that nesting operations commence about mid-January and continue till at least the first week in August and probably later, so that the breeding season in this area is a very protracted one.

Ethiopsar fuscus maharattensis (Sykes). The Southern Jungle Myna.

Specimen collected: 172 ♂ 28-1-33 Sānthanpāra 3,500 ft.

Elsewhere noted at: Marāiyūr (3,000 ft.—more common and abundant than the foregoing species); Munnār (5,000 ft.—Kanan Devan Hills—abundant); Thattākād (200 ft.); Kottāyam (ca. S.L.); Peermade (3,200 ft. fairly

common); Kūmili (3,000 ft.—Cardamom Hills—common); Trivandrum Town (ca. S.L.); Wadakkāncheri (400 ft.); Karūpadanna (ca. S.L.).

Colours of bare parts: Iris bluish-white; bill orange-yellow, dark brown at nostrils, gape and base of lower mandible; mouth dark slate; legs and feet yellow; claws brown.

[The one ♂ measures:

Bill.	Wing.	Tail.	Tarsus.
27.5	131.5	78	35.5 mm.—H. W.]

The statement by Ferguson (*J.B.N.H.S.*, xv, 463) to the effect that this species does not ascend the Travancore hills seems surprising, and it certainly is not correct at the present time. The Survey found it fairly common both in the low and foothills country of Travancore and conspicuously so in the hills where it occurs to the exclusion of the Common Myna. Its distribution, however, is patchy; for example it was absent in the Ashāmbū Hills and my notes do not record it from Rājampāra, Camp Derāmalāi or Pādāgiri.

At Marāiyūr and in the low country, the Jungle Myna was frequently observed in mixed flocks with the Common Myna, grubbing amongst flooded fallow fields or attending on grazing cattle. They fed largely on *Ficus* figs of various species, *Lantana* berries and on the nectar of *Erythrina* (*lithosperma* and other species) blossoms. The specimen, shot off these, had a quantity of pollen adhering to its throat and tuft feathers. The tuft at the base of the culmen acts as an efficient pollen brush.

This Myna has apparently not been recorded from the Palni Hills and it does not occur in Ceylon.

Breeding: The organs of the specimen (28 January) were in normal non-breeding condition. At Peermade, on 24 February, a pair were observed building in a hollow in a tree-trunk, 8 ft. up, in the compound of the Travellers' Bungalow, and on 4 March several pairs were busy nesting in holes in the partially submerged tree-trunks standing in Periyār Lake.

No published records of its breeding in Travancore or Cochin exist. According to the *Fauna* (iii, 58) the Jungle Myna breeds in South India from February to May and this season evidently applies to our area as well.

FAMILY: PLOCEIDÆ.

Ploceus philippinus travancoreensis subsp. nov. The Travancore Baya or Weaver-Bird.

Specimens collected: 316 ♂, 317 ♂, 318 ♀ 19-2-33 Kottāyam ca. S.L.; 678 ♀ imm. 16-7-33 (Beach); 726 ♂, 727 ♂ 26-7-33, 741 [♂?] 29-7-33 (Kūt-tāni 300 ft.); 785 ♂ imm. 4-8-33 (Cattle Farm 150 ft.) Trivandrum Tālūk; 913 ♂ imm. 27-11-33 Wadakkāncheri 400 ft.

Elsewhere noted at: Marāiyūr (3,000 ft.; only old nest colonies !).

Colours of bare parts: Iris hazel brown; bill horny-brown, yellowish at chin and gape; mouth pink; legs, feet and claws brownish flesh-colour. In the ♀ (318) the brown of the bill is paler.

[Measurements:

	Bill.	Wing.	Tail.	Tarsus.
4 ♂♂ adult.	18-20	70-75	41.5-48	20-21 mm.
2 ♂♂ juv.	—	68-70	40-42.5	— mm.
1 ♀	20	72.5	moult	19.5 mm.

These Weavers can certainly not be retained with the typical race. The upper plumage is much darker and browner, while the breast and flanks have a more pronounced brown wash, the shaft streaks being more defined and at the base broader than is usual in the typical race. On these features alone I am prepared to separate this as another of the peculiar Travancore forms and propose for it the name:

PLOCEUS PHILIPPINUS TRAVANCOREENSIS subsp. nov.

Type: No. 317 ♂ (breeding) 19-2-1933 Kottāyam (Backwaters), sea level.
Coll.: Sālim Ali. Deposited in British Museum.

There is a further point of interest connected with this series. It contains 4 breeding males—in all of which the organs were enlarged—and none of these have attained the full breeding plumage as known in the typical form. The type has a yellow crown, a fairly developed black throat patch and odd golden feathers on the breast. The other three lack the throat patch and the yellow crown and have the yellow on the breast represented only by odd feathers. One has a yellow wash on the crown, the other two have the supercilium yellow. It is impossible to be dogmatic on so small a series, and the specimens may not be mature, but they suggest that in this race as in *burmanicus*, the normal breeding plumage is largely suppressed. If so, this will be a further character of the race.—H. W.]

Beyond the low country, signs of the Baya were noted only at Marāiyūr (3,000 ft.). Here, two or three small colonies consisting of from 3 to 8 dis-used nests each were observed suspended on mango trees amidst terraced paddy-fields in the valley lying fallow at this season (early January). From the fact that all the nests hung on the eastern side of the trees, it may be presumed that the birds nested here during the south-west monsoon and that they only came up for breeding purposes while the paddy crops were standing and departed after that function had been performed and the paddy harvested.

In the low country of Travancore and Cochin and about the backwaters, where paddy is the principal crop grown, the Baya is common and its works abundantly in evidence in the neighbourhood of this cultivation. In the dry season the birds keep mainly to the backwaters, but spread out during the monsoon over most of the low country.

In the Pālni Hills it of course does not occur, but it is found in suitable localities in Ceylon.

Breeding: Specimen No. 316 (breeding plumage; testes 8×6 mm.), 317 (breeding plumage; testes 9×5 mm.) and 318 (ovarian follicles over 1 mm. in diameter) were all shot on 19 February off a colony of about 25 nests in various stages—some completed and occupied by females, others barely begun. They hung from the fronds of a cocoanut palm (ca. 50 ft. up) in a hamlet on the banks of Vembanād backwaters. The breeding season of the Baya in this area, as elsewhere, seems to be directly correlated with paddy cultivation which provides the birds with both nesting material and food for themselves and their young. In localities where paddy cultivation is dependent wholly upon the rainy season, it is well known that nesting operations do not commence until after the monsoon has well set in and the paddy plants or the coarse saw-edged grasses which supply the building material are several inches high. In the backwaters where irrigation is perennial, paddy crops were standing at this period (middle February) ready to be harvested in about a fortnight. As soon as this crop is reaped a second sowing is made which ripens before the south-west monsoon sets in. During the monsoon months all the paddy land in the region of the backwaters is completely submerged so that Bayas can only continue to breed in this neighbourhood from early in the year up till the commencement of the south-west monsoon in May or June, or more precisely between the end of one monsoon and the beginning of the next. During the rainy season therefore the Bayas resort to the neighbourhood of the regular paddy cultivation further inland, and this is presumably the explanation for the deserted nest colony in January at Marāiyūr. Two of the July specimens (726 and 727) had enlarged organs and were ready to breed, and Pillai notes that on 4 August nesting activities were still in full swing near the Cattle Farm. Two of the July/August specimens are immature with yellow gapes and imperfectly ossified skulls.

It is evident that on account of the favourable conditions obtaining in Travancore as regards paddy cultivation, Bayas breed here practically throughout the year, most probably in shifts or relays as they become sexually mature.¹

¹ At my request Mr. Pillai visited the Kottayam backwaters in the middle of December (1935) in search of further breeding specimens. He found that paddy cultivation there had only just commenced and he failed altogether to come across any Bayas at that time.

According to *Nidification* (iii, 3) Bourdillon took many nests with eggs in Travancore in May and thence onwards to August.

In our experience, paddy leaf is the building material exclusively, or at least most extensively, used in Travancore and Cochin. We did not see any nests made of cocoanut fibre, as have been described, inspite of the great abundance and availability of this material. The birds are capricious in regard to the selection of sites. Cocoanut palms are largely patronised, but sometimes a couple of palmyra palms standing amidst a cocoanut grove or in its vicinity seemed to be the centre of attraction, all the nests being concentrated upon them.

Ploceus manyar flaviceps Lesson. The Madras Streaked Weaver Bird.

Specimen collected: 288 ♂ 15-2-33 Vembanād backwaters, Kottāyam.

Elsewhere not noted.

Colours of bare parts: Iris brown; bill brownish-horn, paler at commissure; legs and feet brownish-pink; claws dusky.

[Other Travancore specimens seen:

Brit. Mus. Coll.: ♂ and juv. 21-6-77 Vellarney Lake (Hume Coll.).

The Survey specimen—♂ in breeding plumage—measures:

Bill.	Wing.	Tail.
18.5	71	45 mm.—H. W.]

Ferguson (*J.B.N.H.S.*, xv, 468) describes this Weaver as confined to the plains in Travancore, where it is not common. The Survey only came across it by the Vembanād backwaters near Kottāyam where the birds were breeding and fairly numerous, though only in patches.

It is a local resident in Ceylon.

Breeding: The specimen (15 February—breeding plumage) had enlarged testes measuring 7×5 mm. and it was busy collecting strips of the coarse saw-edged grass that grows so plentifully on bunds and dykes along the backwaters. A colony of 15 nests was located on the same date among tufts of tall grass and *Pandanus* thickets growing on a small islet in the backwater, barely three yards by two. The nests were smaller than those of *Ploceus philippinus*, woven more loosely and roughly, and in texture rather resembling those of the Indian Wren-Warbler. They lacked the prolonged entrance tubes and had only slight 'porches'. Pellets of mud were plastered within as is the case with the Common Baya. The colony contained several unfinished nests in various stages, and among the birds a preponderance of males in breeding dress over females was noticed. Of the completed nests examined, one contained 3 eggs, 3 nests 2 eggs each, and 1 contained a single. Two eggs taken, measured 19×13.5 and 19×14 mm. respectively.

T. F. Bourdillon (*S.F.*, vii, 29) found thousands beginning to build in June amongst the reeds which formed floating islands in the Vellayāni Lake about 6 miles from Trivandrum. *Nidification* (iii, 9) adds that the same observer found it breeding in Travancore from July to September. These reed beds have since disappeared and with them the nesting colonies of the Streaked Weaver-bird.

I should not be surprised if, like the Common Baya, this species is also found to breed in the Travancore-Cochin area over a considerable part of the year, varying with local conditions. In Northern India birds in February and March are in eclipse plumage and breed about September. Wait (*Birds of Ceylon*, p. 115) says that the breeding season on the island is in February and March and again in June.

Munia malacca (Linn.). The Black-headed Munia.

Specimens collected: 257 ♀, 258 ♂, 259 ♂ 10-2-33 Thattākād 200 ft.

Elsewhere not noted.

Colours of bare parts: Iris brown; bill pale bluish-grey, dusky on culmen; mouth cream colour with slaty crescent and blotches; legs and feet slate; claws horny-brown.

[Other specimens examined:

Brit. Mus. Coll.: ♂ 21-6-77 Vellarney Lake (Hume Coll.).

B.N.H.S. Coll.: ♂, ♀ 20-7-93 Kodaikanal (Pálnis); ♂ 31-1-01 Devicolum [Travancore] (Ferguson).

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
2 ♂♂	13-13.5	55.5-56	32	16 mm.
3 ♀♀	13-13.5	53-55.5	30.5-35	16-16.5 mm.—H. W.]

The Travancore Survey only once came across a single flock of 20 to 25 birds in the vicinity of standing irrigated paddy crops in a clearing in deciduous jungle. All the 3 specimens secured were undergoing complete moult.

According to Ferguson (*J.B.N.H.S.*, xv, 468) it is only found in the low country of Travancore where flocks may often be met with especially about the backwaters. Stewart apparently found them in the hills also, to what elevation is not stated.

In the Pálni Hills, Terry (*S.F.*, x, 478) found it fairly common in the Lower Pálnis and breeding in the Pittur Valley in April. There is a specimen from Kodaikanal in the Bombay Natural History Society's Collection.

The Black-headed Munia is a locally distributed resident in Ceylon.

Breeding: The Survey procured no data on the nesting of this species in Travancore or Cochin. Bourdillon (*S.F.*, vii, 39) found it breeding among the reeds in Vellayāni Lake (near Trivandrum) in June. Stewart also obtained nests in grass fields in Travancore (*Nidification*, iii, 11) but the season is not mentioned; Ferguson gives the breeding season here as May to August.

***Uroloncha striata siriata* (Linn.).** The White-backed Munia.

Specimens collected: 314 ♂, 315 ♀ 19-2-33 Kottāyam ca. S.L.; 418 ♂, 419 ♀ 7-3-33 Kūmili 3,000 ft.

Elsewhere noted at: Thattākād (200 ft.); Nemmāra (300 ft.); Karūpa-danna (S.L.).

Colours of bare parts: Iris brown; bill, upper mandible horny-black, lower bluish-grey; mouth pinkish-grey or pale yellow and grey; legs, feet and claws slate or slaty-brown.

[No other Travancore specimens seen.]

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
2 ♂♂	13-13.5	51-54	38	13.5 mm.
2 ♀♀	13.5	53-54	38.5-39	13 mm.—H. W.]

The White-backed Munia is, as Ferguson observes, commoner in Travancore—also in Cochin—than the foregoing species, though far from generally distributed. The Surveys came across it in the low country as well as, to a lesser extent, in the hills up to 3,000 ft. elevation. Flocks of 8 to 15 birds and smaller parties were usually observed about paddy cultivation in forest clearings, in fruit gardens by homesteads along the backwaters, and also in lightly wooded cultivated country generally.

In the Pálni Hills, Terry (*S.F.*, x, 478) found a flock in the Pittur Valley, but says nothing about its status. It is a common species in Ceylon up to 2,500 ft. and in parts up to 4,000 ft.

Breeding: Specimens Nos. 314 and 315 (19 February) were a pair building in a pollarded *Thespesia populnea* tree, about 7 ft. up, near a backwater homestead. The testes of the former measured 5×4 mm., while the largest ovarian follicle of the latter was about 4 mm. in diameter. The gonads of the other 2 specimens were in a quiescent state.

In Travancore Stewart and Bourdillon obtained eggs from May to August, but both say that odd nests with young or eggs may be found in any month. . . . Bourdillon speaks of clutches of 8 eggs. (*Nidification*, iii, 18).

***Uroloncha kelaarti jerdoni* (Hume).** The Rufous-bellied Munia.

Specimens collected: 187 ♀ imm., 188 ♀ 20-1-33 Sānthanpāra 3,500 ft.; 250 ♀ 9-2-33 Thattākād 200 ft.; 671 ♂ 26-4-33 Balamore Estate 2,000 ft.

Elsewhere noted at: Marāiyūr (3,000 ft.); Wadakkāncheri (400 ft.); Pādagiri (3,000 ft.—Nelliampathy Hills).

Colours of bare parts: Iris brown; bill dark horny-brown, bluish at chin and base of lower mandible; mouth slate with pale yellow crescent on palate and patches of the same colour; legs and feet greenish-plumbeous; claws horny-brown. The immature (No. 187) differed from the adults in having the mouth cream colour, blotched with slaty and in having no greenish tinge on the legs and feet.

[A small series from Travancore (Fry and Bourdillon) in the British Museum examined, but I have omitted to note details of individuals.

Measurements:

	Bill.	Wing.	Tail.	Tarsus.
1 ♂	14	56.5	43	13.5 mm.
3 ♀ ♀	13-13.5	57-58	36.5-38	14-15 mm.—H. W.]

This is a fairly common resident species in Travancore and Cochin, more or less confined to the hilly portions though also met with by the Surveys sparingly in the foothills country, but not at all in the succeeding plains belt or on the coast. It frequented scrub and grassland sometimes in the proximity of cooly-lines or hillmen's settlements on the edge of jungle and tea plantations, in small parties of 3 or 4 or flocks of up to 30 or more birds.

It is apparently common in the Palni Hills. In Ceylon, the typical race *U. k. kelaarti* (Jerdon) is found in the hills above 2,000 ft.

Breeding: No. 187 (30 January) was immature with very imperfectly ossified skull and in worn juvenile plumage. No. 671 (26 April) had testes measuring 4×3 mm. and it was undergoing pre-nuptial moult. No other data in this regard was procured by the Surveys.

T. F. Bourdillon (*J.B.N.H.S.*, xv, 468) gives the breeding season in Travancore as June to August and says that the birds nest at elevations of 2,000 ft. and upwards. Six to eight eggs is said to be the normal clutch.

***Uroloncha malabarica* (Linn.). The White-throated Munia.**

Specimens collected: 559 ♂ 10-4-33 Cape Comorin ca. S.L.; 631 ♀ 20-4-33 Arāmboli 250 ft.

Elsewhere not noted.

Colours of bare parts: Iris brown; upper mandible horny-brown, lower bluish-grey; mouth grey and pink; legs, feet and claws greyish-pink.

[Plumage too worn for measurements. No other Travancore specimens seen.—H. W.]

I can fully endorse Ferguson's statement (*J.B.N.H.S.*, xv, 469) that in Travancore this *Munia* is only found in the dry open country about Cape Comorin—up to approximately the Arāmboli Gap—where it is fairly common, being also the only *Munia* met with. It was observed in pairs, family parties or small flocks feeding on grass-seeds, etc.

In Ceylon also the distribution of this species is restricted to the dry areas in the north.

Breeding: Both the specimens (10 and 20 April) had slightly enlarged gonads. The male was in heavy general moult and the female in very worn plumage. On 19 April a bird was observed carrying building material—a grass blade—in its bill, so evidently some nesting at any rate was in progress then.

Ferguson gives the breeding season as December to March.

***Uroloncha punctulata lineoventer* (Hodgson). The Spotted Munia.**

Specimens collected: 728 ♂ 26-7-33 (Küttāni 300 ft.); 765 ♂ 1-8-33 (Beach) Trivandrum Tālnik and Town; 934 ♂ 3-12-33, 943 ♂ 5-12-33, 966 ♂ 10-12-33 Nemmarā 300 ft.; 1045 ♂ 30-12-33 Karūpadanna ca. S.L.

Elsewhere not noted.

Colours of bare parts: Iris orange-brown; bill slaty-black, blue-grey at base of lower mandible; mouth slaty-grey with cream-coloured crescent on palate; legs and feet bluish-slate; claws brown.

[Measurements :

	Bill.	Wing.	Tail.
5 ♂♂ (breeding plumage)	12-13.5	57-58.5	37-41 mm.
1 ♂ (brown plumage)	12.5	54	33 mm.

Additional specimens examined :

Brit. Mus. Coll. : ♀ 17-6-77, ♀ 12-6-77 Lower Pālnis (Fairbank).

I have not yet been able to work out—for lack of the necessary moulting specimens—the relationship between the brown and spangled plumages.—H. W.]

The Surveys found the Spotted Munia much more generally distributed in the low country in Cochin than in Travancore, nowhere above 300 ft. elevation, and as Ferguson says (*J.B.N.H.S.*, xv, 469) it evidently does not ascend the hills in this area. This is curious because in the Nilgiris I found several nests at Kotāgiri (ca. 6,300 ft.) in July and August, and a pair were building in the Ootacamund Botanical Gardens (ca. 7,000 ft.) on 27 September.

The birds were met with in pairs, small parties and flocks—one of over 70—in the neighbourhood of paddy cultivation in hummocky country. It was observed that the flocks in December comprised chiefly of birds in the plain brown plumage. Its food seemed to consist very largely of ripening paddy grains supplemented by grass-seeds. The crops and stomachs of the specimens were gorged with the grains. The crop of one contained 14 entire grains of green paddy, while its stomach was packed with broken pieces of the same.

Fairbank met with this species twice in the Lower Pālnis, but unfortunately does not comment upon its status there. In Ceylon it is generally distributed up to 2,500 ft. and locally to 4,000 ft.

Breeding : The July and August specimens both had testes enlarged to 6×4 mm. They were in fresh spotted plumage and evidently breeding. Of the four December specimens, Nos. 434 (3 December—testes 4×3 mm.—incubation patch !) had probably lately finished breeding. No. 943 (5 December—testes 6×4 mm.) a partial albino, was in very worn dress and moulting primaries, secondaries and rectrices. It had either just finished breeding or was changing into pre-nuptial dress. No. 966 (10 December) in plain brown plumage had undeveloped organs. Unfortunately its skull was damaged by shot which rendered age determination impossible. No. 1045 (30 December—testes 5×4 mm.—spotted plumage) was apparently breeding.

According to Ferguson, this Munia breeds in Travancore from April to July. From the evidence provided by the Survey specimens and the data collected in the field, it seems more likely that breeding continues irregularly, more or less throughout the year.

Amandava amandava amandava Linn. The Red Munia.

This Munia has not been recorded in Travancore or Cochin, but Terry found a large flock at Pulungi in the Pālni Hills in April (*S.F.*, x, 478).

FAMILY : FRINGILLIDÆ.

Carpodacus erythrinus roseatus (Blyth). The Common Indian or Hodgson's Rose-Finch.

Specimens collected : 24 ♂ 6-1-33 Marāiyūr 3,000 ft.; 105 ♂ 18-1-33 Munnār 5,000 ft.; 993 ♀ 18-12-33 Pādāgiri 3,000 ft.

Elsewhere noted at : Sānthanpāra (3,500 ft.—Cardamom Hills).

Colours of bare parts : Iris brown; bill, legs, feet and claws horny-brown.

[Measurements :

	Bill.	Wing.	Tail.	Tarsus.
2 ad. ♂♂	14.5	85.5-87	55-59	17.5-19 mm.
1 ♀	15	84.5	—	18.5 mm.

No other specimens from Travancore seen.

The juvenile closely resembles the adult female. I have not seen the post-juvénal moult, but young birds in their first winter and summer still resemble the adult female and cannot be distinguished in any way from her.

Many males breed in this plumage but I have seen no evidence to show whether it is moulted at the second autumn between August and October or whether it is retained and adult males must be considered dimorphic.

Adults have a complete post-nuptial moult from August to October. There is no pre-nuptial moult and the plumage in consequence becomes considerably worn in summer. The female then becomes much duller and browner. The male changes considerably in appearance as a result of the wearing off of the feather edges and an apparent increase of colour owing to the prismatic effect of transmitted light on the worn surface.¹—H. W.]

The Rose-Finch is a common winter visitor to the northern hill ranges of Travancore. Kinloch records it as fairly common in the Nelliampathy Hills (Cochin) and Ferguson found it in the High Range. The southernmost point at which the Surveys came across it was in the Cardamom Hills at ca. 10°N. lat. It goes about in small flocks of usually up to about 20 birds, frequenting scrub country on the outskirts of evergreen sholas and hillmen's settlements, and cardamom, tea and coffee plantations. The highest elevation at which the Surveys came across them was about 7,000 ft. (above Marāiyūr) in *Rubus* thickets bordering hill streams.

Their food was observed to consist largely of the berries of *Lantana camara*, *Maesa perrottetiana* and *Trema orientalis*—also seeds and flower buds of *Polygonum chinense* L.—while they regularly visited *Erythrina lithosperma* shade trees in coffee plantations for the nectar of their blossoms. The chin of a specimen shot off these was coated with pollen.

The Rose-Finch has apparently not been recorded in the Pālñi Hills nor has it yet occurred in Ceylon.

Gymnorhis xanthocollis xanthocollis (Burton). The Yellow-throated Sparrow.

Specimens collected: 507 ♂ 4-4-33 Trivandrum Town; 560 ♂ 10-4-33 Cape Comorin; 897 ♂ 24-11-33 Wadakkācheri 400 ft.

Elsewhere noted at: Marāiyūr (3,000 ft.); Thattākād (200 ft.); Kottāyam (ca. S.L.); Vadāserikara (ca. 400 ft.—near Rājampāra); Arāmboli (250 ft.); Nemmāra (300 ft.); Karūpadanna (ca. S.L.).

Colours of bare parts: Iris brown; bill brownish-black; mouth greyish-pink; legs, feet and claws brownish flesh colour.

[Measurements:

	Bill.	Wing.	Tail.	Tarsus.
3 ♂♂	15-17	83-86	50-53	16-17.5 mm.

Other specimens examined:

Trivandrum Mus.: ♀ 7-7-07 Arāmboli.

Also 4 Fry and Anjango birds in the British Museum without data.

The post-nuptial moult in this species is complete, and there is no pre-nuptial moult. The post-juvenile moult is said by Ticehurst to be complete.—H. W.]

The Yellow-throated Sparrow is fairly common in the drier portions of the low country of both Travancore and Cochin where it frequents the neighbourhood of cultivation and backwater homesteads, and also light deciduous jungle. In the cold weather they were observed keeping in flocks, often of considerable size, gleaning paddy grains in harvested fields and feeding extensively on *Lantana* berries and on the nectar of *Bombax* and *Erythrina* flowers in mixed avian company. At this season, large numbers usually congregated into leafy bamboo clumps or bushy trees during the heat of the day and created a great noise with their chirping. Except at Marāiyūr, it

¹ Two males, apparently of this race, in the aviary of Sahebzada Dr. Saiduz-zafar Khan (Dehra Dun) moulted at the end of October from the adult rose-coloured plumage into one closely resembling the female but with the chin, cheeks and throat a more or less immaculate vinous-buff. At the time of writing (6 December) this plumage remains unchanged although in the wild state males (at least some) may still be seen in the rose-coloured plumage. I do not find this eclipse plumage of the male recorded in the literature.—S. A.

was not met with above about 500 ft. elevation. Already by the first week of February, the flocks had started breaking up, and by the beginning of April, pairs had become the rule and courtship was in progress generally.

It does not ascend the Pālñi Hills, but Fairbank (*S.F.*, v, 408) found it plentiful at Periakulam near their eastern (dry) base. In Ceylon it is only a straggler.

Breeding: No. 560 (10 April) had testes measuring 7×5 mm. and it was breeding. On 12 April a pair were observed feeding young in a hollow 7 ft. up a *Thespesia* trunk (Cape Comorin) and on 13 April another nest was in occupation.

Ferguson (*J.B.N.H.S.*, xv, 469) states that in Travancore this species breeds in May and June.

***Passer domesticus indicus* Jardine & Selby. The Indian House-Sparrow.**

Specimens collected: 53 ♂, 54 ♀ 10-1-33 Marāiyūr 3,500 ft.; 518 ♂, 519 ♀, 520 ♀ 7-4-33, 586 ♂ 13-4-33 Cape Comorin ca. S.L.; 629 ♂ 19-4-33 Arāmboli 250 ft.; 678 ♀ 16-7-33, 714 ♂ 23-7-33, 764 ♀, 767 ♂ 1-8-33 Beach, Trivandrum.

Elsewhere noted at: Wadakkācheri (400 ft.); Nemmāra (300 ft.); Trichūr; Karūpadanna (S.L.); Ernākūlam; Cochin Town.

Noted as absent (or exceedingly rare ?) at: Mūnnār (5,000 ft.); Kottāyam (ca. S.L.); Peernade (3,200 ft.); Kūmili (3,000 ft.—none observed, but said to occupy dwellings in town sparingly); Tenmalāi (500 ft.).

Colours of bare parts: Iris brown; bill in ♂ dark horny-brown to black, in ♀ and immature pale horny-brown; mouth yellowish-pink, pink, or slaty-pink varying with age; legs and feet brownish flesh colour; claws dusker.

[Measurements:

	Bill.	Wing.	Tail.	Tarsus.
10 ♂ ♂	13-14.5	72-78	49-55.5	16-18 mm.
4 ♀ ♀	13.5-15	70.5-74	51-55	17.5-18.5 mm.

In the Eastern Ghats Survey (*J.B.N.H.S.*, xxxvi, 838) I commented on the fact that the available series of House-Sparrows from Southern India was a poor one but that as far as it went it allowed me to state that no difference either in size or colour could be distinguished between South Indian birds and birds from Northern India, south of the Himalayas. The good series obtained by the Surveys has now confirmed that view. The Travancore birds agree in colour, state for state, with my Punjab series and there is no appreciable difference in measurements:—

	Bill.	Wing.	Tail.	Tarsus.
8 ♂ ♂ Punjab	13.5-14	72.5-78	51.5-57	17-18 mm.
4 ♀ ♀ Punjab	14-15.5	72.5-77.5	53-54.5	17-20 mm.

In the Sparrow the post-juvenile moult is complete. There is no spring moult and the autumn moult is complete. The juvenile plumage is too well known to require description.—H. W.]

The distribution of the House-Sparrow in this area is curious. It is fairly general in the low country of Cochin, but becomes inexplicably patchy and capricious in North Travancore as will be seen from the gaps indicated above. In the low and coastal country of South Travancore it is common. Excepting at Marāiyūr—and possibly at Kūmili—both along the highways of communication between Travancore and the adjoining drier districts of Madras Presidency through the barrier of the ghats that separate them, it was not met with above an elevation of about 500 ft. Wherever present it was, of course, as a commensal of man.

In the Pālñi Hills, Fairbank (*S.F.*, v, 408) found House-Sparrows in villages up to 5,000 ft. altitude. The same race, *indicus*, is abundantly resident in Ceylon.

Breeding: In the first week of January (1933) House-Sparrows were observed breeding commonly among the rafters and thatching of the huts in Marāiyūr village. The organs of Nos. 53 and 54 (10 January) confirmed this; the testes of the former measured 5×4 mm., while the ovarian follicles and distended oviduct of the latter indicated that it had lately finished laying.

Of the April specimens, only 586 (13 April) with testes enlarged to 7×5 mm. was breeding, while in 519 (7 April) the testes were slightly developed (3×2 mm.) although its imperfectly ossified skull showed that the bird was as yet immature. In the second week of April, however, Sparrows were nesting freely in holes in the masonry sides of the Travellers' Bungalow well at Cape Comorin. This was also observed to be the case in the frontier Customs station at Arāmboli on 14 April.

The gonads of three of the July/August specimens indicated that breeding was still in progress at that time. In No. 714 (23 July) the testes measured 9×4 mm. while the largest ovarian follicle of 764 (1 August) was about 3 mm. in diameter.

On 3 January (1934) nesting was in progress on cornices etc. in the Guest House at Ernākulam, and on the same date similar activity was noted in and about the historic synagogue of the White Jews in Cochin Town.

Ferguson says (*J.B.N.H.S.*, xv, 469) that the Sparrow breeds in Travancore in February and March, but the evidence shows that there is no definite season and that it does so more or less throughout the year.

FAMILY: HIRUNDINIDÆ.

[*Delichon urbica* (Linnaeus). The House-Martin.]

Not met with by the Surveys, neither recorded from this area by previous observers, but there is a specimen labelled 'Travancore' from Surgeon-General Fry in the British Museum with no more precise date. It is open to doubt whether this specimen was actually procured in Travancore or purchased from some dealer there, or perhaps even mislabelled.]

Riparia concolor (Sykes). The Dusky Crag Martin.

Specimens collected: 597 ♂ 15-4-33, 620 ♂ 18-4-33 Arāmboli 250 ft.: 886 ♂ 20-11-33 Kūriārkūtti 1,600 ft.

Elsewhere noted at: Pādagiri (at ca. 3,000 ft.—Nelliampathy Hills).

Colours of bare parts: Iris brown; bill blackish-brown; mouth pale flesh colour; legs and feet pinkish-brown; claws horny brown.

[Measurements:

	Bill.	Wing.	Tail.
3 ♂♂	10-11	109.5-112.5	45-46 mm.

This is an extension of range as the Dusky Crag Martin was not previously known to occur south of the Nilgiris where according to William Davison it is found at all elevations as a not uncommon winter visitor, a few birds staying to breed.—H. W.]

The Dusky Crag Martin has not been recorded from the Travancore-Cochin area before. It was found to be very locally and patchily distributed in the low country as well as hills, and far from common. The birds were usually observed hawking insects in company with Common or Spine-tail Swifts over steep grass-covered hillsides with sheet rock or cliffs and scarps, up to about 5,000 ft. elevation.

The species has not occurred in the Pālani Hills and it does not extend to Ceylon.

Breeding: The testes of specimen No. 597 (15 April) measured about 3×2 mm., those of the other two (20 November and 18 April) being in a quiescent state. Both the April birds were undergoing complete post-nuptial moult. No. 620 (18 April) was one of a pair which had a nest on an inaccessible ledge of rock, ca. 40 ft. up, in the hills bordering the Arāmboli Gap. The contents of the nest could not be ascertained, but from the fact that the owners visited it every now and again, and their actions while there, I presume that it contained fairly grown young which the parents were feeding.

Elsewhere in its range, the Crag Martin breeds largely in February and March.

Hirundo rustica gutturalis Scopoli. The Eastern Swallow.

Specimens collected: 289 o? 15-2-33, 299 ♂ 17-2-33, 305 ♂ juv. 18-2-33 Kottāyam (Vembanād Backwaters); 529 ♂, 530 ♂ 7-4-33, 578 ♂ 12-4-33 Cape Comorin; 1012 o? juv. 25-12-33 Karūpadanna ca. S.L.

Elsewhere not noted.

Colours of bare parts: Iris brown; bill, legs, feet and claws blackish-brown; mouth pinkish-yellow. In juvenile (No. 305) bright yellow.

[Additional specimen seen:

Brit. Mus. Coll.: ♀ 28-2-80 Quilon [Travancore] (Bourdillon).

In the Swallow, both in the typical race and in *H. r. gutturalis*, to which I attribute these specimens from their small size and broken breast band, both the post-juvénal moult and the post-nuptial moult of the adult are complete and appear to take place somewhat irregularly and slowly, occupying the greater part of the winter. There is no time for a spring moult as some of these specimens have still not completed their moult by April.

These specimens (adults and juveniles) are all, except No. 289 which has finished, in different stages of their moult and so cannot be measured.—H. W.]

The Surveys found this Swallow fairly common in the neighbourhood of paddy cultivation in the low country, especially the coastal region and about the backwaters, both in Travancore and Cochin. Ferguson (*J.B.N.H.S.*, xv, 470) describes it as a winter visitor to the low country in Travancore (and not hill country as is inadvertently stated in the Eastern Ghats Report, *J.B.N.H.S.*, xxxvi, 840). The birds were most abundant about the backwater paddy-fields where they were to be seen either perched on the tall grass stems or dyke stakes, or hawking insects over the standing crops or the surface of the water.

This species is a winter visitor to Ceylon.

The gonads of the specimens were in a quiescent state. No. 529 (7 April) was very fat suggesting that it was more or less ready to emigrate.

Hirundo javanica domicola Jerdon. The Nilgiri House-Swallow.

Specimens collected: 38 ♀, 39 ♂, 40 ♀ 9-1-33 Marāiyūr 3,500 ft.; 663 ♂, 664 o? juv., 665 ♂, 666 ♂ juv. 25-4-33 Marūthānkūzhi 4,000 ft. (Ashāmbū Hills); 1001 o?, 1002 o? 20-12-33 Pādāgiri 3,000 ft.

Elsewhere not noted.

Colours of bare parts: *Adult*: Iris brown; bill brownish-black; mouth yellowish-pink; legs and feet horny-brown; claws like bill. *Immature*: Iris brown; bill horny-brown, yellow at gape; mouth and gape yellow; legs and feet pinkish-brown; claws horny-brown.

[Measurements:

	Bill.	Wing.	Tail.
2 ♂♂ ad.	10.5-11	103-104.5	46.5-47 mm.
2 ♀♀ ad.	10.5	103.5	44.5-45 mm.
3 juvs.	—	100-101.5	42-42.5 mm.

The juvenile is very similar to the adult but the upper parts are less metallic, the chestnut forehead is less defined and the chestnut of the chin, throat and breast is softer and paler. The rest of the lower parts are faintly washed with pinkish-white. The tertiaries and their coverts and the lower tail coverts are broadly edged at their tips with pinkish white. The outer tail feathers are blunter at the tip.

This good series confirms the distinctness of the South Indian race which differs from the typical race in the smaller bill and the greener gloss of the upper plumage.—H. W.]

The lowest elevation at which the Surveys came across the Nilgiri House-Swallow was about 3,000 ft. (Marāiyūr), and as Ferguson says (*J.B.N.H.S.*, xv, 470) it is usually found at 4,000 ft. and upwards in the hills of both Travancore and Cochin. Kinloch (*J.B.N.H.S.*, xxix, 564-5) records it from the Lily Downs of Cochin, ca. 4,700 ft. The birds were met with in fair numbers hawking insects over grassy hillsides and on the edge of tea plantations. No. 666—a juvenile—was observed being fed by its parent in mid-air.

This swallow probably occurs in the Pālani Hills, but there are no records thence. It is a resident in the Ceylon hills.

Breeding: The gonads of the specimens furnished no indication as regards breeding, but skull examination and colours of bare parts showed that two of the birds procured on 25 April were juvenile and evidently lately out of nest.

According to Bourdillon (*J.B.N.H.S.*, xv, 470) the breeding season in Travancore is March, April and May. It builds its mud nest, well lined with feathers, usually singly and not in colonies, under the eaves of a house or even against a rock. 1 to 3 eggs is said to be the normal clutch.

***Hirundo daurica erythropygia* Sykes. Sykes' Striated Swallow.**

Specimens collected: 92 ♀ 14-1-33 Marāiyūr 3,000 ft.; 279 ♀, 280 ♀ 12-2-33 Thattākād 200 ft.; 638 ♀ 21-4-33 Arāmboli 250 ft.

Elsewhere noted at: Kottāyam (S.L.); Camp Derāmalāi (3,000 ft.—Panthalam Hills); Wadakkācheri (400 ft.); Karūpadanna (ca. S.L.).

Colours of bare parts: Iris brown; bill, legs, feet and claws dark horny-brown (in No. 92 with a pinkish tinge); mouth pinkish-yellow.

[Measurements:

	Bill.	Wing.	Central tail feathers	Outer tail feathers
4 ♀ ♀	10-11	110-116.5	40-43.5	71-79 mm.

These 4 specimens have the chestnut rump-band slightly richer in colour than is usual, but I am not satisfied that this difference is of subspecific value. It is very slight in degree and the colour of the rump-band is apt to vary with wear and bleaching.

No other Travancore specimens seen except one in the British Museum without data from Surgeon-General Fry.—H. W.]

Sykes's Striated Swallow is fairly common in the low country of Travancore and Cochin and was also met with by the Surveys sparingly and capriciously in the hills up to about 3,500 ft. Ferguson (*J.B.N.H.S.*, xv, 470) shot a specimen in the High Range at over 5,000 ft. and Kinloch (*ibid.*, xxix, 564-5) records it (*'nepalensis'*) on the Lily Downs of Cochin at about the same elevation.

In the Pālmi Hills, Terry (*S.F.*, x, 469) saw this species at Pulungi in April. It is a rare straggler to Ceylon where the chestnut tinted *H. d. hyperythra* Layard is the resident form.

Breeding: Nos. 279 and 280 (12 February) had conspicuously granular ovaries which, with their more or less immaculate plumage, suggested that they were ready to breed shortly. No published record of its breeding in Travancore or Cochin exists, however, and the *Fauna* (iii, 251) even describes this bird only as a winter wanderer into our area.

***Hirundo daurica* subsp.?**

Specimens collected: 1021 ♀, 1022 ♂?, 1023 ♂? imm., 1024 ♂ 27-12-33 Karūpadanna ca. S.L.

Elsewhere ?

Colours of bare parts as in the foregoing.

[These 4 swallows are all immature and by their measurements (wing: 114.5-117.5, central tail feathers: 37.5-43, outer tail feathers: 76.5-90 mm.) are evidently not *erythropygia*, for it will be remembered that the tail in the juvenile is always shorter than it will be in the adult. Correctly sexed young birds from the breeding ground of the various races are too rare in collections for me to have worked out the differences between the immature birds of different races, but these agree with other young birds found in India in winter which I have hitherto (provisionally) called *nepalensis*.—H. W.]

These swallows were shot out of a vast concourse of several hundred (or thousand ?) birds that collected morning after morning on some telegraph wires near the Travellers' Bungalow. They began assembling at about 7 o'clock and flew about in dense shoals or sat huddled together for over two furlongs of the line, all facing the sun and preening themselves. By about 9 or 9-30 they had usually all dispersed to feed. None were to be seen on the wires in the evenings and it was observed that the birds all retired to roost for the night among the reeds on small islets in the backwaters, which were white with their droppings.

(To be continued).